Chapter 3 California Environmental Quality Act (CEQA) Evaluation

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans. Caltrans is the Lead Agency under CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement (EIS), or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an EIS, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental documents.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report (EIR) must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance under CEQA. This chapter discusses the effects of this project and CEQA significance.

3.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.1.1 Aesthetics

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

3.1.1.1 CEQA Significance Determinations for Aesthetics

The potential for the Build Alternative to result in adverse impacts to aesthetic resources was assessed in the *Visual Impact Assessment* (VIA, August 2017), the VIA Errata (January 2018), and Section 2.5 Visual/Aesthetics of the Initial Study/Environmental Assessment (IS/EA). The following discussion is based on those analyses.

a) No Impact. The viewshed within the project limits consists of mountainous terrain including views of the canyon, ridgelines, natural vegetation, and rock outcroppings. There are no officially designated scenic vistas within the project limits. Implementation of the Build Alternative would not affect scenic views or result in the loss of any scenic resources in the area. Therefore, the Build Alternative would result in no impacts related to scenic vistas. No mitigation is required.

b) No Impact. State Route 74 (SR-74) is not a State-designated Scenic Highway, and there are no State-designated Scenic Highways crossing the project corridor. Therefore, the Build Alternative would result in no impacts related to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. No mitigation is required.

c) Less Than Significant Impact With Mitigation Incorporated. Construction of the Build Alternative would result in temporary visual changes as a result of construction activities including: removing vegetation, grading, the use of night lighting, dust control, temporary structures, hauling equipment, construction staging or laydown yards, and signs indicating traffic detours. However, after construction is completed, these temporary impacts would no longer occur. Areas where vegetation is removed for roadway widening would be replanted at the completion of construction as specified in Project Feature PF-VIS-2. Construction impacts are temporary and disturbed areas would be revegetated upon completion of construction with implementation of Project Feature PF-VIS-2, and construction-related impacts to visual character and quality would be less than significant.

Several mature trees closest to the road may be removed to accommodate shoulder widening and would be replaced with smaller box trees. Thus, new tree groupings along the road may slightly alter visual quality of the project corridor. However, the Build Alternative would implement replacement planting to compensate for the loss of existing vegetation as specified in Project Feature PF-VIS-2. With implementation

of Project Feature PF-VIS-2, potential permanent impacts to visual quality would be less than significant.

The visual character of the Build Alternative would be compatible with the existing visual character of the existing corridor and the visual quality of the corridor would not be altered with implementation of the Build Alternative. Although Midwest Guardrail System (MGS) would be installed as part of the project, the proposed MGS would include aesthetic treatments (i.e., application of an earth-toned stain) as described in Measure VIS-1 to maintain the visual character and quality of the project area and to keep the appearance of old and new MGS sections consistent. Therefore, with implementation of mitigation Measure VIS-1, potential permanent impacts to visual character and visual quality would be reduced to less than significant.

d) Less Than Significant Impact. The primary source of existing lighting in the project corridor is from vehicle headlights on SR-74. The Build Alternative includes the installation of streetlights near the entrance and exit of the United States Forest Service (USFS) San Juan Fire Station, which would only be visible to viewer groups near the fire station. With use of lighting fixtures with non-glare hoods as specified in Project Feature PF-VIS-1, only the entrance and exit of the fire station would be illuminated and there would be little to no lighting intrusion into the adjacent open space area as a result of the street lights. No other lighting sources are proposed in the Build Alternative and the existing level of lighting would not be altered within the remainder of the project corridor. Therefore, potential impacts related to new lighting sources would be less than significant.

The Build Alternative would not introduce an additional source of glare through the widening of the existing shoulders and improvement of pull-outs in both directions along SR-74.

3.1.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒	☐
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

3.1.2.1 CEQA Significance Determinations for Agriculture and Forest Resources

The potential for the Build Alternative to result in adverse impacts related to Agriculture and Forest Resources was assessed in Section 2.1, Land Use, in the IS/EA. The following discussion is based on that analysis.

a) No Impact. Based on a review of the California Department of Conservation's (DOC) California Important Farmland Finder,[1] no designated Prime Farmland,

[1] State of California Department of Conservation (DOC). Division of Land Resource Protection Maps. Website: https://maps.conservation.ca.gov/ DLRP/ CIFF/ (accessed February 19, 2018).

Unique Farmland, or Farmland of Statewide Importance is present in the study area. Therefore, no designated farmland would be converted to transportation or other non-agricultural use with implementation of the Build Alternative, and no mitigation is required.

b) No Impact. As described in Section 2.1.1, the proposed project would not involve the permanent or temporary conversion of land zoned for by the local jurisdictions' General Plans. Additionally, based on a review of the Williamson Act Parcels map for Orange County,[1] no land under Williamson Act contract is within the footprint of the Build Alternative and, therefore, no land under contract would be impacted. Furthermore, the Build Alternative would not conflict with existing zoning for agricultural use or a Williamson Act contract, and no mitigation is required.

c), d) Less Than Significant Impact. Timberland is defined as land, other than land owned by the federal government…which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees (Public Resource Code [PRC] Section 4526). Timberland-zoned production areas are areas which have been zoned pursuant to California Government Code Section 51112 or 51113 and is devoted to and used for growing and harvesting timber or compatible uses (Government Code 51104). Per the California Department of Fish and Wildlife's (CDFW) Timberland Conservation Program,[2] reserved forests preclude timber harvest, including National Park Service forests and other publicly owned protected forests. The project limits are entirely within protected regional recreational park area and USFS lands. There is no timberland or timberland-zoned timberland production areas within the project area. Therefore, the Build Alternative would not impact or result in the conversion of timberlands.

Construction of the Build Alternative would result in direct temporary impacts to forest land in the form of Temporary Construction Easements (TCEs) at the

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1 State of California DOC. Division of Land Resource Protection. Agricultural Preserves 2004. Williamson Act Parcels, Orange County, California. ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Orange_WA_03_04.pdf (accessed February 18, 2018).

2 California Department of Fish and Wildlife. 2018. Timberland Conservation Program. Habitat Conservation Planning Branch. Website: https://www.wildlife.ca.gov/conservation/timber (accessed February 18, 2018).

Cleveland National Forest. The Build Alternative would require the use of approximately 1.6 acres of existing open space and recreation land uses for TCEs at Ronald W. Caspers Wilderness Park (Caspers Wilderness Park) and Cleveland National Forest, along existing SR-74, including in the vicinity of the San Juan Fire Station. All land used for TCEs would be restored to its original condition after construction is complete as described in Project Feature PF-LU-1. With implementation of Project Feature PF-LU-1, temporary construction impacts of the Build Alternative to forest land would be less than significant, and no mitigation is required.

Construction of the Build Alternative would require permanent acquisition of approximately 0.2 acre within the Cleveland National Forest along the existing SR-74 State right-of-way. The amount of land proposed to be acquired is approximately 0.00005 percent of the total amount of land in Cleveland National Forest. Given the nominal amount of forest land that would be acquired for the easement, the Build Alternative would not: (1) conflict with the existing zoning or cause the rezoning of forestland, or (2) result in the significant loss of forest land. No mitigation is required.

e) Less Than Significant Impact. The proposed project involves the acquisition of a small portion of public land from Cleveland National Forest and Caspers Wilderness Park for an easement (0.2 acre and 0.7 acre, respectively). The Build Alternative would not involve other changes in the existing environment that could result in the conversion of Farmland to non-agricultural use or the conversion of forest land to non-forest use. No mitigation is required.

3.1.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.1.3.1 CEQA Determinations for Air Quality

The potential for the Build Alternative to adversely impact air quality was assessed in Section 2.9, Air Quality, in the IS/EA. The following discussion is based on that analysis.

a) No Impact. The currently approved transportation plans and/or programs for southern California are the 2016–2040 Southern California Association of Government (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and the 2017 SCAG Federal Transportation Improvement Program (FTIP). The 2016 RTP/SCS was adopted by SCAG on April 7, 2016; the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) approved the 2016 RTP/SCS on June 1, 2016. Also, SCAG received its conformity determination from the FHWA and the FTA indicating that all air quality conformity requirements for the 2016 RTP/SCS have been met. The 2017 FTIP was adopted by SCAG on September 14, 2016, and federally approved on December 16, 2016. The most recent Amendment to the 2017 FTIP is No. 17-14, approved by the FHWA and the FTA in October 2017. The Build Alternative is included in the conforming 2017 FTIP in the grouped listing for Safety Improvements – State Highway Operation and Protection Program (SHOPP) Collision Reduction Program (FTIP ID: ORA 0011002). Because it is a safety project and would not result in changes in operational emissions, the Build Alternative is exempt from project-level conformity requirements. Because no changes to operational emissions would occur as a result of the Build Alternative, the project would not conflict with or obstruct the implementation of any applicable air quality management plan (AQMP). No mitigation is required.

b) Less Than Significant Impact. Construction of the Build Alternative would result in temporary short-term impacts to air quality due to the release of particulate

emissions generated by excavation, filling, grading, hauling, and other activities related to construction including emissions from construction vehicles. These emissions would be temporary and limited to the immediate area surrounding the construction site. Implementation of Project Features PF-AQ-1 through PF-AQ-5, which include fugitive dust source controls, ozone precursor emission controls, prevention of spills onto public streets, Caltrans Standard Specifications for Construction, and construction vehicle prohibition, would avoid any air quality impacts resulting from construction activities. After construction of the Build Alternative is complete, all construction-related air quality emissions would cease. No mitigation is required.

The Build Alternative would not change traffic composition, speed, or volumes along SR-74; therefore, a neutral impact on air quality would occur as a result of the Build Alternative. Additionally, the Build Alternative would not generate new regional vehicular trips and no changes in regional vehicular emissions would occur Therefore, operation of the Build Alternative would not result in long-term air quality impacts, and no mitigation is required.

c) Less Than Significant Impact. Since there would be no operational enhancement of SR-74 as a result of the project and no resultant increase in traffic volumes, neither construction nor operation of the Build Alternative would result in concentrations exceeding the 1-hour or 8-hour carbon monoxide (CO) standards, delay the attainment of particulate matter less than 2.5 microns in size ($PM_{2.5}$) or particulate matter less than 10 microns in size ($PM_{10)}$ ambient air quality standards (AAQS) in the South Coast Air Basin, or result in a cumulatively considerable net increase of these pollutants; and impacts are considered less than significant. No mitigation is required.

d) No Impact. As discussed in Section 2.9.2.4 of the IS/EA, there are no sensitive receptors located within 500 feet of the proposed 5.1-mile length of the safety improvement project. Therefore, the Build Alternative would not expose sensitive receptors to substantial pollutant concentrations, and no mitigation is required.

e) Less Than Significant Impact. The Build Alternative may result in temporary, short-term construction-related objectionable odors from sources such as equipment emissions and asphalt paving. Project Features PF-AQ-2, PF-AQ-3, and PF-AQ-5 would minimize any potential short-term odor impacts, and potential odor impacts would be less than significant. No mitigation is required.

3.1.4 Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

3.1.4.1 CEQA Significance Determinations for Biological Resources

The potential for the Build Alternative to result in adverse impacts to biological resources was assessed in the *Natural Environment Study* (NES; February 2018), the *Jurisdictional Delineation* (JD; February 2018), and Sections 2.11, Natural Communities; 2.12, Wetlands and Other Waters; 2.13, Plant Species; 2.14, Animal Species; 2.15, Threatened and Endangered Species; and 2.16, Invasive Species, in the IS/EA. The following discussions are based on these analyses.

a) Less Than Significant With Mitigation Incorporated.

Special-Status and Threatened and Endangered Species

"Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Listed special-status species are considered at risk of becoming extinct and are legally protected under the federal endangered species act and/or the California endangered species act. The following sections include discussions of all special-status plant and animal species identified with potential to occur in the general project vicinity.

Listed Special-Status Plant Species (Munz's Onion, San Diego Ambrosia, Thread-Leaved Brodiaea, Santa Monica Dudleya, Slender-Horned Spineflower, and Laguna Beach Dudleya)

A reconnaissance-level field survey was conducted on May 26, 2017, to characterize the general biological resources and to ascertain the presence or absence of listed species and the likelihood of their occurrence in or near the biological study area (BSA). A focused special-status plant habitat suitability assessment was conducted on November 29, 2017 which included all locations within the proposed project disturbance limits as well as areas in the vicinity of known special-status plant species occurrences. There is a low potential for four listed special-status plant species to occur in the BSA: Munz's onion, San Diego ambrosia, thread-leaved brodiaea, and Santa Monica dudleya. Although the BSA contains suitable habitat for two additional listed plant species identified, slender-horned spineflower and Laguna Beach dudleya, these species are not expected to occur in the BSA as the BSA is located outside of the species known range and because these species were not observed in the BSA during 2017 surveys.

The Build Alternative is not expected to result in direct temporary effects to listed special-status plant species. However, there is a low potential for the Build Alternative to result in indirect temporary effects to listed special-status plant species through increased dust, erosion during construction, and/or the introduction of invasive species. Implementation of avoidance and minimization Measures BIO-1 and BIO-3 requiring the delineation and installation of Environmentally Sensitive Area (ESA) fencing and invasive species control would reduce the potential for temporary impacts to listed special-status plant species to less than significant.

The Build Alternative is not expected to result in direct or indirect permanent impacts to the listed special-status plant species that have the potential to occur in the BSA.

For informational purposes, a "No Effect" determination has been made for the six listed special-status plant species under the provisions of the Federal Endangered Species Act Section 7(a)(2).

Listed Special-Status Animal Species (Arroyo Toad, Least Bell's Vireo, Southwestern Willow Flycatcher, Coastal California Gnatcatcher, and Southern California Steelhead Trout)

A reconnaissance-level field survey was conducted on May 26, 2017, to characterize the general biological resources and to ascertain the presence or absence of listed species and the likelihood of their occurrence in or near the BSA. Focused surveys following USFWS protocols for federally- and/or State-listed animal species were conducted for the arroyo toad (ARTO), least Bell's vireo (LBVI), southwestern willow flycatcher (SWWF), and the coastal California gnatcatcher (CAGN). Suitable habitat is present in the BSA for LBVI, SWWF, CAGN, ARTO, and the southern California steelhead trout. Only the ARTO was observed in the BSA during project surveys in 2017.

Arroyo Toad

Construction of the Build Alternative would result in temporary direct impacts to 5.77 acres of ARTO critical habitat, 1.45 acre of which does not contain the physical or biological features required for ARTO recovery. Therefore, a total of 4.32 acres of designated ARTO critical habitat temporarily impacted by the Build Alternative contains the physical or biological features required for ARTO recovery. Additional areas outside of designated ARTO critical habitat within the project footprint are suitable for ARTO and contain the physical or biological features required for ARTO recovery. Approximately 1.48 acre of suitable ARTO habitat outside of designated critical habitat would be temporarily impacted by the Build Alternative; of this 1.48 acre, 0.004 acre exists as potential breeding pool habitat. Construction of the Build Alternative may result in indirect temporary impacts associated with construction noise, vibration, dust, erosion, and lighting in areas outside of the project impact limits. Avoidance and minimization Measures BIO-1, BIO-4, BIO-13, and BIO-18 through BIO-22 would require delineation of ESAs, restoration/revegetation of temporary impacts, night lighting during construction, avoidance of ARTO breeding habitat, ARTO pre-construction surveys, ARTO exclusionary fencing, ARTO biological monitoring, and a worker environmental awareness program. Mitigation Measure BIO-23 would provide for compensatory mitigation for suitable ARTO habitat, and would

reduce the temporary adverse effects to ARTO to less than significant with mitigation.

Construction of the Build Alternative would result in direct permanent effects to ARTO including potential mortality of individuals within the construction limits as well as suitable/occupied/critical habitat removal and modifications. Other direct permanent impacts to the species could result from scour of creek substrate material as a result of the installation of new drainage features. A total of 11.02 acres of designated ARTO critical habitat would be permanently impacted by the Build Alternative, although 9.79 acres of these permanently impacted areas are characterized as having an asphalt surface or other developed areas that do not contain the physical or biological features required for ARTO recovery. Therefore, a total of 1.23 acres of designated ARTO critical habitat containing the physical or biological features required for ARTO recovery would be permanently impacted by the Build Alternative. Approximately 0.80 acre of suitable ARTO habitat outside of designated critical habitat would be permanently impacted by the Build Alternative; of this 0.80 acre, 0.12 acre exists as potential breeding pool habitat.

The Build Alternative has the potential to result in indirect permanent impacts to this species from changes in hydrology where drainage improvements are installed or modified, or in areas where adjacent habitat compositions change as a result of the new roadway and drainage infrastructure. However, changes in hydrology where drainage improvements are proposed to be added or modified are anticipated to be relatively minor given the highly variable hydrology of San Juan Creek. Avoidance and minimization Measure BIO-22 would require a worker environmental awareness program. Permanent impacts to ARTO would be less than significant.

Least Bell's Vireo

The Build Alternative would not result in direct temporary impacts to LBVI because LBVI were not observed in the BSA and suitable habitat within the project impact limits is very limited. However, the Build Alternative has the potential to result in indirect temporary effects to LBVI habitat associated with increased noise, vibration, dust, and lighting during construction. Avoidance and minimization Measures BIO-1 through BIO-3 and BIO-22 require delineation of ESAs, pre-construction nesting bird surveys, invasive species control, and

environmental training for workers. The potential for indirect temporary impacts to LBVI would be less than significant.

The Build Alternative is not expected to result in direct or indirect permanent impacts to LBVI or designated critical habitat because this species was not observed within the BSA, and designated critical habitat is not present for this species.

Southwestern Willow Flycatcher

The Build Alternative is not expected to result in direct or indirect temporary impacts to SWWF because SWWF were not observed in the BSA and this species is extremely rare in Orange County. Because SWWF typically occupy riparian natural communities, implementation of avoidance and minimization Measures BIO-1 through BIO-3 and BIO-22 would require delineation of ESAs, pre-construction nesting bird surveys, invasive species control, and environmental training for workers. The potential for any direct or indirect temporary impacts to SWWF would be less than significant.

The Build Alternative would not result in any direct or indirect permanent impacts to SWWF or designated critical habitat because this species and its designated critical habitat was not observed within the BSA, and this species is extremely rare in Orange County.

Coastal California Gnatcatcher

The Build Alternative would not result in direct temporary impacts to CAGN because CAGN were not observed in the BSA. Construction of the Build Alternative has the potential to result in indirect temporary impacts to CAGN habitat associated with increased noise, vibration, dust, and lighting during construction. Because CAGN typically occupy coastal sage scrub (CSS), avoidance and minimization Measures BIO-1 through BIO-3 and BIO-22 would require delineation of ESAs, pre-construction nesting bird surveys, invasive species control, and environmental training for workers. The potential for any direct or indirect temporary impacts to CAGN would be less than significant.

The Build Alternative would not result in any direct or indirect permanent impacts to CAGN or designated critical habitat because CAGN and its designated critical habitat were not observed in the BSA.

Non-Listed Special-Status Plant Species (Many-Stemmed Dudleya, Sticky Dudleya, San Miguel Savory, Parry's Tetracoccus, Intermediate Mariposa Lily, Summer Holly, Mesa Horkelia, Intermediate Monardella, Chaparral Nolina, and Nuttall's Scrub Oak)

During surveys, four non-listed special-status plant species were observed within the BSA, but outside the project impact limits: many-stemmed dudleya, sticky dudleya, San Miguel savory, and Parry's tetracoccus. Six other non-listed special-status plant species were considered to have at least a moderate probability of occurrence within the BSA: intermediate mariposa lily, summer holly, mesa horkelia, intermediate monardella, chaparral nolina, and Nuttall's scrub oak.

The Build Alternative would not result in direct temporary impacts to many-stemmed dudleya, sticky dudleya, intermediate mariposa lily, summer holly, mesa horkelia, intermediate monardella, chaparral nolina, or Nuttall's scrub oak because these species were not observed within the project impact limits. Construction of the Build Alternative would potentially result in indirect temporary impacts to many-stemmed dudleya, sticky dudleya, San Miguel savory, Parry's tetracoccus, intermediate mariposa lily, summer holly, mesa horkelia, intermediate monardella, chaparral nolina, and Nuttall's scrub oak through increased dust and erosion. Avoidance and minimization measure BIO-10 would require special-status plant ESA fencing. Potential indirect temporary impacts to non-listed special-status plants would be less than significant.

Construction of the Build Alternative would have the potential to result in direct permanent impacts to San Miguel savory and Parry's tetracoccus associated with the removal of individual plants and occupied habitat within the project impact limits. The Build Alternative may also result in indirect permanent impacts to many-stemmed dudleya, sticky dudleya, San Miguel savory, Parry's tetracoccus, intermediate mariposa lily, summer holly, mesa horkelia, intermediate monardella, chaparral nolina, and Nuttall's scrub oak due to the proximity of known occurrences or observed individuals of these species to the project impact limits. Such indirect permanent impacts may consist of increased dust, erosion, changes in hydrology, or the introduction of invasive species in areas adjacent to the project footprint. Avoidance and minimization measure BIO-10 would require special-status plant ESA fencing. Potential indirect temporary impacts to non-listed special-status plants would be less than significant.

Non-Listed Special-Status Animal Species

Thirteen non-listed special-status animal species identified as potentially occurring in the BSA were observed during wildlife surveys conducted in 2017. Other non-listed special-status animal species were identified with moderate or high potential to occur in the BSA.

Ringtail

Construction of the Build Alternative may result in direct impacts to ringtail if tree trimming or tree removal is necessary during nesting bird season (February 15–August 31). Avoidance of tree trimming or removal during nesting bird season would avoid impacts, as ringtail denning season takes place from May to July, with young potentially remaining in the den through August. The Build Alternative may also result in indirect temporary impacts to ringtail associated with construction activities such as increased dust, noise, vibration, and lighting. The Build Alternative would not result in direct or indirect permanent impacts to ringtail with implementation of avoidance and minimization Measures BIO-1, BIO-6 through BIO-9, BIO-11, BIO-15, and BIO-22, which require delineation and installation of ESAs, avoidance of oak tree dripline, monitoring of retained oak trees, pruning of retained oak trees according to approved standards, oak tree replacement, avoidance of breeding season, minimization of tree trimming, night lighting during construction, nesting ringtail exclusionary buffers, and environmental awareness training for workers. The potential for adverse temporary and permanent impacts to ringtail would be less than significant.

Special-Status Riparian and Aquatic Animal Species

The Build Alternative may result in direct temporary impacts to aquatic species due to the drainage work proposed in San Juan Creek and associated riparian habitats. The Build Alternative may also result in indirect temporary impacts to special-status riparian and aquatic animal species from increased dust, noise, vibration, lighting, erosion, and potential fuel spills from construction equipment. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-10, BIO-13, and BIO-18 through BIO-23 require the delineation and installation of ESAs, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, special-status plant ESA fencing, night lighting during construction, pre-construction survey and monitoring by a qualified bat biologist, avoidance of ARTO breeding habitat, ARTO pre-construction surveys, ARTO exclusionary fencing, ARTO biological monitor, environmental awareness

training for workers, and invasive predator eradication. Temporary impacts to special-status riparian and aquatic animal species would be less than significant.

The Build Alternative could directly impact special-status riparian and aquatic animal species due to the drainage work proposed in San Juan Creek and associated riparian habitats. Direct permanent impacts may include mortality from ground disturbance associated with construction activities or habitat modifications. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-10, BIO-13, and BIO-18 through BIO-23 require the delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, special-status plant ESA fencing, night lighting during construction, pre-construction survey and monitoring by a qualified bat biologist, avoidance of ARTO breeding habitat, ARTO pre-construction surveys, ARTO exclusionary fencing, ARTO biological monitor, environmental awareness training for workers, and invasive predator eradication and would ensure permanent impacts to special-status riparian and aquatic animal species would be less than significant.

Special-Status Grassland and Open Habitat Animal Species

Construction of the Build Alternative would result in direct temporary impacts to grassland and open habitat species due to work proposed in such habitats within the BSA. Construction of the Build Alternative would also result in indirect temporary impacts to special-status grassland and open habitat animal species from increased dust, noise, vibration, lighting, erosion, and potential fuel spills from construction equipment. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-13, and BIO-22 would require delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, night lighting during construction, and environmental awareness training for workers. Temporary impacts to special-status grassland and open habitat animal species would be less than significant.

The Build Alternative would directly impact special-status grassland and open habitat animal species due to work proposed within these habitats within the BSA. Direct impacts would include mortality from ground disturbance associated with construction activities or habitat modifications. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-13, and BIO-22 would require delineation of ESAs with ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, night lighting during

construction, and environmental awareness training for workers. Permanent impacts to special-status grassland and open habitat animal species would be less than significant.

Special-Status Coastal Sage Scrub and Chaparral Animal Species

Construction of the Build Alternative would result in direct temporary impacts to CSS and chaparral species due to work proposed in such habitats within the BSA. Construction of the Build Alternative would also result in indirect temporary impacts to special-status CSS and chaparral animal species from increased dust, noise, vibration, lighting, erosion, and potential fuel spills from construction equipment. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-13, and BIO-22 would require delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, night lighting during construction, and environmental awareness training for workers. Temporary impacts to special-status CSS and chaparral animal species would be less than significant.

The Build Alternative would directly impact special-status CSS and chaparral animal species due to work proposed within these habitats within the BSA. Direct impacts would include mortality from ground disturbance associated with construction activities or habitat modifications. Avoidance and minimization Measures BIO-1 through BIO-4, BIO-13, and BIO-22 would require delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration of temporary impacts, night lighting during construction, and environmental awareness training for workers. Permanent impacts to special-status CSS and chaparral animal species would be less than significant.

Special-Status Bridge/Culvert and Crevice-Dwelling Animal Species

The Build Alternative would not result in temporary direct impacts to the Hot Springs Canyon Bridge; therefore, no direct adverse effects to the bat-roosting habitat in this bridge are anticipated during construction of the Build Alternative..

The Build Alternative would result in temporary direct impacts to night-roosting bat habitat at the Cold Springs Canyon concrete box culvert from repair or replacement. Although no night-roosting bats were directly observed at the Cold Springs Canyon culvert during the nighttime survey, due to the presence of guano within the culvert and the high-quality foraging habitat adjacent to the culvert,

bats are expected to night roost within this structure and could be subject to direct effects during construction. Potential temporary indirect impacts to bat species include lighting, noise, and vibration generated by project construction activities in proximity to roost sites. Avoidance and minimization Measures BIO-12 through BIO-14, BIO-17, and BIO-22 would require the replacement of impacted night-roosting bat habitat, night lighting during construction, access to roost features, pre-construction surveys and monitoring by a qualified bat biologist, and environmental awareness training for workers. Temporary impacts to special-status bridge/culvert and crevice-dwelling animal services would be less than significant.

The Build Alternative would result in direct permanent impacts on bats including the loss of roosting sites, particularly with regard to the removal of existing trees and improvements to the Cold Springs Canyon concrete box culvert, or even direct mortality during destruction or disturbance of a roost site. Avoidance and minimization Measures BIO-12 through BIO-14, BIO-17, and BIO-22 would require the replacement of impacted night-roosting bat habitat, night lighting during construction, access to roost features, pre-construction surveys and monitoring by a qualified bat biologist, and environmental awareness training for workers. Permanent impacts to special-status bridge/culvert and crevice-dwelling animal services would be less than significant.

b) Less Than Significant With Mitigation Incorporated. The following sensitive natural communities were observed in the BSA: CSS, coast live oak riparian forest, coast live oak woodland, and sycamore riparian woodland.

Riparian Habitats (Coast Live Oak Riparian Forest and Sycamore Riparian Woodland)

The riparian habitat within the BSA is comprised of coast live oak riparian forest and sycamore riparian woodland. The Build Alternative would directly temporarily impact 0.02 acre of coast live oak riparian forest within ARTO suitable habitat outside of designated critical habitat. The Build Alternative would directly temporarily impact 1.03 acre of sycamore riparian woodland habitat. Of the direct temporary impacts to sycamore riparian woodland, 0.12 acre is within ARTO critical habitat and 0.65 acre is within ARTO suitable habitat outside of designated critical habitat. In addition the Build Alternative would result in indirect temporary construction-related impacts such as dust, potential fuel spills from construction equipment, and temporary changes in hydrology from water diversions, construction-

related runoff, or erosion. Avoidance and minimization Measures BIO-1 through BIO-4, WET-1, BIO-11, and BIO-13 through BIO-23 would require the delineation of an ESA, pre-construction nesting bird surveys, invasive species control, restoration/revegetation of temporary impacts, regulatory permitting, exclusionary buffers for nesting ringtails, replacement of impacted tree removal, night lighting during construction, pre-construction survey and monitoring by a qualified bat biologist, avoidance of ARTO breeding habitat, ARTO pre-construction surveys, ARTO exclusionary fencing, ARTO biological monitor, environmental awareness training for workers, and invasive predator eradication. Temporary impacts to riparian habitats would be less than significant.

The Build Alternative would result in direct permanent impacts to 0.02 acre of coast live oak riparian forest during the installation of one new drainage feature. All 0.02 acre of permanent impact to coast live oak riparian forest is within ARTO suitable habitat outside of designated critical habitat. The Build Alternative would result in direct permanent impacts to 0.98 acre of sycamore riparian woodland due to the widening of the shoulder along SR-74 and the installation of drainage improvements. Of the permanent impacts to sycamore riparian woodland, 0.06 acre is within ARTO critical habitat and 0.53 acre is within ARTO suitable habitat outside of designated critical habitat. In addition, indirect permanent impacts to sensitive vegetation communities could result in limited areas outside of the direct disturbance limits where construction activities would result in lasting effects on the physical environment, such as changes in hydrology where the new drainage features are added or existing features are modified, changes in the nighttime lighting at the San Juan Fire Station, or through enhancing the germination and proliferation of non-native invasive plant species. Avoidance and minimization Measures BIO-1 through BIO-4, WET-1, BIO-11, and BIO-13 through BIO-23 would require the delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration/revegetation of temporary impacts, regulatory permitting, exclusionary buffers for nesting ringtails, replacement of impacted tree removal, night lighting during construction, pre-construction surveys and monitoring by a qualified bat biologist, avoidance of ARTO breeding habitat, ARTO pre-construction surveys, ARTO exclusionary fencing, provision of an ARTO biological monitor, environmental awareness training for workers, and invasive predator eradication. Mitigation Measure BIO-5 would provide for compensatory mitigation for sycamore riparian woodland, ensuring permanent impacts to riparian habitat would be less than significant with mitigation.

Coastal Sage Scrub (CSS)

The Build Alternative would result in direct temporary impacts to 2.63 acres of CSS vegetation communities due to construction staging and access activities and/or areas of temporary ground disturbance. Of the 2.63 acres impacted, 0.91 acre is within ARTO critical habitat and 0.12 acre is within ARTO suitable habitat outside of the designated critical habitat. In addition the Build Alternative would result in indirect temporary construction-related impacts such as dust, potential fuel spills from construction equipment, construction-related runoff, or erosion. Avoidance and minimization Measures BIO-1 through BIO-4 and BIO-22 would require the delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration/revegetation of temporary impacts, and environmental awareness training for workers. Temporary impacts to CSS would be less than significant.

The Build Alternative would result in direct permanent impacts to 1.73 acres of CSS communities due to the widening of the shoulder along SR-74 and the installation of drainage improvement features. A large portion of the CSS permanent impact area is vegetated with disturbed CSS and is located adjacent to the roadway. Of the permanent impacts to CSS, 0.33 acre is within ARTO critical habitat and 0.03 acre is within ARTO suitable habitat outside of the designated critical habitat. Indirect permanent impacts may occur in limited areas outside the direct disturbance limits where construction activities would result in lasting effects on the physical environment (changes in hydrology where new drainage features are added or where existing drainage features are modified, or through enhancing the germination and proliferation of non-native invasive plant species). Avoidance and minimization Measures BIO-1 through BIO-4 and BIO-22 would require the delineation and installation of ESA fencing, pre-construction nesting bird surveys, invasive species control, restoration/revegetation of temporary impacts, and environmental awareness training for workers. Permanent impacts to CSS would be less than significant.

Coast Live Oak Woodland

The Build Alternative would result in direct temporary impacts to 0.37 acre of coast live oak woodland. Avoidance and minimization Measures BIO-6 through BIO-9 would require the avoidance of the oak tree dripline, monitoring of retained oak trees, and pruning of retained oak trees according to approved standards. Temporary impacts to coast live oak woodland and oak trees would be less than significant.

The Build Alternative would result in direct permanent impacts to 0.03 acre of coast live oak woodland. Impacts to coast live oaks were quantified and evaluated based on diameter at breast height (DBH; cumulative DBH of trunks over 1 inch for multi-trunked trees). Direct impacts to the trees may include pruning of large limbs greater than 3 inches in diameter, removal, or activities occurring within the root zone, including adding or removing soil within the dripline. Avoidance and minimization Measures BIO-6 through BIO-9 would require the avoidance of the oak tree dripline, monitoring of retained oak trees, pruning of retained oak trees according to approved standards, and oak tree replacement. Permanent impacts to coast live oak woodland and oak trees would be less than significant.

c) Less Than Significant With Mitigation Incorporated. The Build Alternative would potentially result in temporary impacts to jurisdictional drainages within the Jurisdictional Study Area (JSA) associated with culvert modifications as well as construction of new drainage features. The Build Alternative would result in permanent impacts to jurisdictional drainages within the JSA associated with replacement of culverts and existing overside drains, and construction of new drainage features.

The Build Alternative would result in temporary impacts to 0.006 acre of USACE non-wetland waters and 0.001 acre of USACE wetland waters. The Build Alternative would result in permanent impacts to 0.138 acre of USACE non-wetland waters and 0.0001 acre of USACE wetland waters.

The areas subject to RWQCB jurisdiction coincide with those subject to USACE jurisdiction (0.007 acre of temporary impacts and 0.1381 acre of permanent impacts).

In addition, the Build Alternative would potentially result in temporary impacts to 0.035 acre of streambed and 0.980 acre of riparian habitat under CDFW jurisdiction. The Build Alternative would potentially result in permanent impacts to 0.066 acre of streambed and 0.998 acre of riparian habitat under CDFW jurisdiction.

Avoidance and minimization measures WET-1, BIO-1, BIO-2, BIO-4, BIO-20, BIO-21, and BIO-22 would require regulatory permitting, delineation of ESAs, pre-construction nesting bird surveys, restoration/revegetation of temporary impacts, ARTO exclusionary fencing, ARTO biological monitoring, and participation in a worker environmental awareness program. Potential temporary impacts to areas under USACE, RWQCB, and CDFW jurisdiction would be less than significant. Implementation of mitigation Measure BIO-5, requiring compensatory mitigation for

sycamore riparian woodland, would reduce permanent impacts to wetlands and riparian communities to less than significant with mitigation.

d) Less Than Significant. Within the BSA, San Juan Creek is a key regional habitat linkage and wildlife movement corridor for mountain lion, bobcat, mule deer, and coyote. Although not observed during 2017 project surveys, should species such as mountain lion, bobcat, mule deer, or coyote be present within the BSA, they are expected to move out of or avoid the work area during construction. Temporary impacts to San Juan Creek resulting from construction of the Build Alternative would include construction lighting, vibration, dust and noise. However, wildlife is expected to continue to use corridors when construction work is not occurring, particularly at dawn and dusk, or avoid the work areas during construction. Therefore, construction of the Build Alternative would not result in any substantial adverse temporary direct or indirect impacts to wildlife corridors or movement and no mitigation is required.

The Build Alternative is not expected to permanently affect wildlife movement or decrease the functionality of any wildlife crossings within the BSA as no permanent barriers would be placed within any known wildlife movement corridors as part of the proposed project. Therefore, the Build Alterative would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites and no mitigation is required.

e) No Impact. There are no local policies or ordinances protecting biological resources that are relevant to the BSA. Therefore, the Build Alternative would not conflict with local policies or ordinances protecting biological resources. No mitigation is required.

f) Less Than Significant Impact. The Build Alternative is located within the USACE San Juan Creek/Western San Mateo Creek Watershed Special Area Management Plan (SAMP) area and will require permitting under the SAMP. Further measures may also be required to compensate for impacts in order to obtain this authorization. The SAMP for the San Juan Creek Watershed was developed and approved by the USACE in cooperation with the County of Orange. The BSA contains areas of USACE and/or CDFW jurisdiction that are included within the San Juan Creek Watershed and the SAMP for the San Juan Creek Watershed. Upon review by the USACE, if the project is found to be inconsistent with the SAMP, an individual permit may be required. As part of the SAMP process, selected Nationwide

Permits (NWPs) have been revoked. Therefore, an NWP authorization for the San Juan Creek Watershed cannot be obtained, but the project may be authorized by a Letter of Permission (LOP).

The project area is also located within the Southern Subregion Master Streambed Alteration Agreement/Habitat Conservation Plan (MSAA/HCP). The MSAA/HCP provides a conservation strategy for 10 sensitive vegetation communities and 7 federally listed species including the ARTO. Although Caltrans is not a participating entity under the MSAA/HCP, infrastructure and safety projects are an allowed activity within the MSAA/HCP planning area; therefore, the Build Alternative does not conflict with the MSAA/HCP.

Pending final verification by the regulatory agencies, the Build Alternative would not conflict with the SAMP and the MSAA/HCP, and impacts would be less than significant. No mitigation is required.

3.1.5 Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

3.1.5.1 CEQA Significance Determination for Cultural Resources

The potential for the Build Alternative to result in adverse impacts related to cultural and paleontological resources was assessed in the Historic Property Survey Report (HPSR; January 2018) and the attachments to the HPSR, the Paleontological Identification Report and Paleontological Evaluation Report (PIR-PER, October 2017), and Sections 2.6, Cultural Resources, and 2.8 Paleontology, of the IS/EA. In accordance with Public Resource Code (PRC) Section 21080.3.1 and Assembly Bill (AB) 52, Caltrans initiated early consultation with California Native American Tribes in May 2017 and July of 2017. Refer to Chapter 4, Comments and Coordination, of

this IS/EA for detailed information pertaining to California Native American Tribe consultation.

a) and b). Less Than Significant With Mitigation Incorporated. As discussed in the HPSR, there are two properties (P-30-1723: San Juan Hot Springs and P-30-528: Prehistoric Artifact Scatter) within the 36.94 acre APE that are considered eligible for the National Register for the purposes of this project only under Caltrans' Section 106 PA, and are therefore considered historical resources pursuant to CEQA.

- **P-30-1723: San Juan Hot Springs.** The site contains a geothermal spring used prehistorically by local natives and missionaries in the 1700s. The site was used for recreational purposes in various forms until it was dismantled in 1990. In the late 1990s the remaining structures burned leaving just foundations and ruins.
- **P-30-528: Prehistoric Artifact Scatter**. Located within the San Juan Hot Springs site, P-30-528 is a prehistoric artifact scatter of a former campsite containing ground stone and flaked stone.

Based on the SCCIC digitized mapping, the resource boundary of P-30-1723 crosses the boundary of the APE and P-30-528 is located inside the resource boundary of P-30-1723. To minimize potential construction related impacts to these resources, mitigation measure CR-1 requires the preparation of an Environmentally Sensitive Area (ESA) Action Plan to protect both sites by installing protective orange plastic fencing to keep out construction personnel. Therefore, with implementation of mitigation measure CR-1, potential impacts to these resources would be less than significant with mitigation.

There is the potential to encounter unknown buried cultural resources or archaeological materials within the project disturbance limits during construction of the Build Alternative. If buried cultural resources or archaeological materials are discovered during construction, Project Feature PF-CUL-1 would be implemented requiring the diversion of earthmoving activities in the vicinity until the discovery can be assessed by a qualified archaeologist. In the event that previously unknown buried cultural materials are encountered during construction, potential impacts to cultural resources would be less than significant. No mitigation is required.

c) Less Than Significant with Mitigation Incorporated. Geologic mapping indicates that the project area contains Young Axial Channel Deposits; Young Landslide Deposits; Old Axial Channel Deposits; Very Old Axial Channel Deposits;

the Trabuco Formation; and the following: Rocks of the Peninsular Ranges Batholith: Granite, Undifferentiated; Gabbro, Undifferentiated; Heterogeneous Granitic Rocks; Santiago Peak Volcanics; and Rocks of Menifee Valley, Undifferentiated. Artificial Fill is also likely present from the surface to varying depths throughout much of the project area where it was placed during the construction of SR-74.

The western end of the project area contains Old Alluvial Fan Deposits and Very Old Alluvial Fan Deposits, which are deposits with high paleontological sensitivity. Excavation in areas that have high paleontological sensitivity could result in impacts to paleontological resources. Mitigation measure PAL-1 requires preparation and implementation of a Paleontological Mitigation Plan (PMP). Adherence to the PMP during construction would reduce potential impacts to paleontological resources to less than significant with mitigation.

d) Less Than Significant Impact: No human remains are known to exist within the APE. Therefore, construction of the Build Alternative would not impact known human remains. However, ground-disturbing activities associated with construction of the Build Alternative have the potential to disturb previously unknown human remains. In the unlikely event that human remains are encountered during construction, Project Feature PF-CUL-2 would be implemented requiring compliance with State Health and Safety Code Section 7050.5, which states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains and that the County Coroner shall be contacted. Pursuant to California PRC Section 5097.98, if the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission, which will then notify the Most Likely Descendant (MLD). At the same time, the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator will be contacted so they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable. In the unlikely event that unknown human remains are encountered during construction, potential impacts would be less than significant. No mitigation is required.

3.1.6 Geology and Soils

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.1.6.1 CEQA Significance Determination for Geology and Soils

The potential for the Build Alternative to result in impacts related to geology and soils was assessed from the County of Orange General Plan (2005), and the California Department of Conservation Geologic Hazards Map (2015).

a) i) No Impact. The study area is not located in an Alquist-Priolo Earthquake Fault Zone, and there are no known active or potentially active faults mapped as crossing or in the immediate vicinity of the study area. Because the study area is not crossed by a known fault and is not in an Alquist-Priolo Earthquake Fault Zone, the Build Alternative would not expose people or structures to effects associated with fault displacement and ground rupture. No mitigation is required.

a) ii) and iii) Less Than Significant Impact. The principal seismic hazard in the vicinity of the study area is slope failure from ground shaking resulting from an earthquake along an active or potentially active fault that could damage the existing roadway and structures within this segment of SR-74. The Elsinore Fault is located approximately 5 miles northeast of the northern limits of the project. Based on the California Geologic Survey of Seismic Hazard Zones for the Canada Gobernadora Quadrangle, the western portion of the study area has not been evaluated for liquefaction. However, the middle portion of the study area around San Juan Hot Springs has been evaluated and is not at risk of liquefaction. The remainder of the study area, east of San Juan Hot Springs, is in a quadrangle that has not been mapped by the California Department of Conservation and no data is available. Because the Elsinore Fault is located approximately 5 miles northeast of the northeast limits of the project area, there is the potential for seismic shaking to occur in the study area. The Orange County General Plan Safety Element (2005) indicates that Orange County is at risk for seismic and non-seismic landslides .As a result, the Build Alternative has the potential to be subject to effects associated with seismic shaking that could damage bridges, other structures, or the road surfaces. Design and construction of the Build Alternative would be consistent with seismic standards set forth in the Caltrans *Seismic Design Criteria* (2013); therefore, the potential for seismic damage to the Build Alternative would be less than significant and no mitigation is required.

a) iv) Less Than Significant Impact. Based on the California Geologic Survey of Seismic Hazard Zones for the Canada Gobernadora Quadrangle, the middle section of the project area is at risk for earthquake induced landslides. It is possible that non-seismic landslides could result from grading and slope stabilization concerns. However, design and construction of the Build Alternative would be conducted consistent with the Caltrans *Highway Design Manual* (2017); therefore, the potential for non-seismic landslides in the project area would be less than significant and no mitigation is required.

b) Less Than Significant Impact. Construction of the Build Alternative would temporarily disturb soil within the State right-of-way as well as within TCEs. Excavated soil in construction areas would be exposed resulting in increased potential for soil erosion during construction compared to existing conditions. During a storm event, erosion could occur at an accelerated rate due to the exposure of soils during grading activities. During all project construction activities, the construction contractor would be required to adhere to the requirements of the General Construction Permit and to implement erosion and sediment control BMPs

specifically identified in the project Storm Water Pollution Prevention Plan to keep sediment from moving off site into receiving waters and impacting water quality in those waters during construction. During operation, an increase in impervious surface area (which would total an additional 1.01 acre under the Build Alternative due to the widening of the paved shoulder) can increase stormwater runoff volume and velocity and lead to downstream erosion. However, the proposed project is linear with many stormwater discharge points that would distribute the additional stormwater runoff to multiple locations, and therefore diffusing potential erosion impacts. Erosion impacts related to water quality are specifically evaluated in Section 2.7, Water Quality and Stormwater Runoff, in the IS/EA. With implementation of Project Features PF-WQ-1 and PF-WQ-2 during construction and operation of the Build Alternative, potential soil erosion impacts would be less than significant. Design pollution prevention Best Management Practices will also be implemented to address erosion during operation of the Build Alternative as specified in Project Feature PF-WQ-4. No mitigation is required.

c) Less Than Significant Impact. No issues related to soil instability in the study area are known at this time, and because the Build Alternative would make minor alterations to an existing facility, geologic instability as a result of the project would not occur. Descending and ascending slopes adjacent to the SR-74 alignment within the project limits could be potentially unstable but would be minimized through the stabilization procedures outlined in the Caltrans *Highway Design Manual* (2017) and standard engineering practices. The Build Alternative consists entirely of safety improvements to SR-74 as opposed to capacity or operational improvements. The potential for impacts associated with the effects of liquefaction, lateral spreading, and seismic settlement would be the same as with the existing condition. Design and construction of the Build Alternative would be consistent with the *Highway Design Manual*; therefore, the potential effects on the structures and facilities proposed in the Build Alternative related to unstable soils would be less than significant, and no mitigation is required.

d) Less Than Significant Impact. Much of Orange County is covered by soil considered to be expansive according to the Orange County General Plan Safety Element. The potential for impacts associated with expansive soils would be the same as with the existing condition because of the generally minor work proposed under the Build Alternative and the fact that improvements would be designed to minimize any such effects. Design and construction of the Build Alternative would be consistent with the Caltrans *Highway Design Manual* (2017); therefore, the potential

impacts associated with expansive soils would be less than significant and no mitigation is required.

e) No Impact. The Build Alternative consists entirely of safety improvements to SR-74. Construction and operation of the Build Alternative would not use septic tanks or alternative methods for disposal of wastewater into subsurface soils, and would not connect to existing public wastewater infrastructure. Therefore, the Build Alternative would not result in impacts related to septic tanks or alternative wastewater disposal method. No mitigation is required.

3.1.7 Greenhouse Gas Emissions

<table>
<tr><th>Would the project:</th><th>Significant and Unavoidable Impact</th><th>Less Than Significant with Mitigation Incorporated</th><th>Less Than Significant Impact</th><th>No Impact</th></tr>
<tr><td>a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</td><td colspan="4" rowspan="2">Caltrans has used the best available information based to the extent possible on scientific and factual information, to describe, calculate, or estimate the amount of greenhouse gas emissions that may occur related to this project. The analysis included in the climate change section of this document provides the public and decision-makers as much information about the project as possible. It is Caltrans' determination that in the absence of statewide-adopted thresholds or GHG emissions limits, it is too speculative to make a significance determination regarding an individual project's direct and indirect impacts with respect to global climate change. Caltrans remains committed to implementing measures to reduce the potential effects of the project. These measures are outlined in the climate change section that follows the CEQA checklist and related discussions.</td></tr>
<tr><td>b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</td></tr>
</table>

3.1.8 Hazards and Hazardous Materials

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

3.1.8.1 CEQA Significance Determinations for Hazards and Hazardous Materials

The potential for the proposed project to result in significant impacts related to hazards and hazardous materials was assessed in the *Initial Site Assessment* (ISA, August 2017). The following discussions are based on that analysis.

a) Less Than Significant Impact. During construction of the Build Alternative, there is the potential to encounter hazardous materials in soils and existing road and structures materials. Construction of the Build Alternative would disturb soils and resurface the existing pavement. As a result, contaminants may be encountered during construction. Typical hazardous materials anticipated to be used during construction of the Build Alternative (e.g., solvents, paints, fuels) and hazardous wastes generated during construction would be handled in accordance with applicable federal and State regulations and Caltrans policies regarding the use, storage, handling, disposal, and transport of these materials. Therefore, potential construction impacts related to hazardous materials would be less than significant.

Routine maintenance activities during operation of the Build Alternative would comply with applicable regulations with respect to the use, storage, handling,

transport, and disposal of potentially hazardous materials The Build Alternative consists solely of safety improvements along SR-74 and would not alter the capacity of the highway or routine transport of hazardous materials. Therefore, operation of the Build Alternative would not result in a permanent impact related to the routine transport, use, or disposal of hazardous materials and no mitigation is required.

b) Less Than Significant Impact. The Build Alternative would not create a substantial hazard to the public or the environment through any reasonably foreseeable upset or accident conditions involving the release of hazardous materials. As discussed in Response 3.1.8 a) above, routine hazardous materials such as paint, solvents, and fuel would be used, handled, stored, disposed of, and transported during construction of the Build Alternative in accordance with applicable local, State, and federal regulations; therefore, a less than significant impact would occur during construction. During operation of the Build Alternative, transport of hazardous materials is subject to strict regulation. Caltrans, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, which further reduces impacts. Therefore, operation of the Build Alternative would not result in a significant permanent impact related to transport or upset of hazardous waste and materials. No mitigation is required.

c) No Impact. There are no existing or proposed schools within one-quarter mile of the Build Alternative. Therefore, the Build Alternative would not result in any temporary or permanents impacts to schools and no mitigation is required.

d) No Impact. The Build Alternative is not located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. Therefore, the Build Alternative would not create a significant hazard to the public or the environment and no mitigation is required.

e) and f) No Impact. The Build Alternative is not located within 2 miles of a public airport or a private airstrip, and the study area is not located in any airport land use plan area. Therefore, the Build Alternative would not result in an airport-related safety hazard for people residing, accessing, or working at the project area and no mitigation is required.

g) Less Than Significant Impact. As described in Section 2.4, Traffic and Transportation/Pedestrian and Bicycle Facilities, construction of the Build Alternative has the potential to result in temporary impacts to traffic circulation, including

emergency services, resulting from temporary road closures. Those impacts would be avoided and/or minimized based on implementation of the TMP during construction as specified in Project Feature PF-T-1. Additionally, Project Feature PF-UES-2 would require coordination of road closures and detour plans with emergency service providers to minimize temporary delays in emergency response times and identify alternative routes for emergency vehicles and routes across the construction areas. Should SR-74 be identified as part of an emergency response plan or an evacuation route, Project Features PF-T-1 and PF-UES-2 would allow for coordination with emergency management officials during construction. Therefore, construction of the Build Alternative would result in less than significant impacts associated with adequate emergency response and no mitigation is required.

The Build Alternative would widen the existing shoulders and improve pull-outs in both directions along SR-74. Long term, these improvements would help facilitate access of emergency response vehicles through the project corridor. Therefore, operation of the Build Alternative would result not result in adverse significant impacts associated with emergency response and no mitigation is required.

h) No Impact. Based on the Orange County Very High Fire Hazard Severity Zone Map (October 2011), the Build Alternative is located in a Very High Fire Hazard Severity Zone (VHFHSZ). The Build Alternative consists entirely of safety improvements to SR-74 and would not result in any greater wildland fire risks than existing conditions. Necessary coordination between Caltrans and the Orange County Fire Authority would occur when required during construction. Therefore, construction and operation of the Build Alternative would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No mitigation is required.

3.1.9 Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☒	☐

3.1.9.1 CEQA Significance Determination for Hydrology and Water Quality

The potential for the Build Alternative to adversely impact hydrology and water quality was assessed in the *Water Quality Assessment Report* (2017), and Section 2.7, Water Quality and Stormwater Runoff, of the IS/EA.

a) Less Than Significant Impact. During construction of the Build Alternative, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions. The total disturbed area for the Build Alternative would be 6.55 acres. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), concrete-related waste, sanitary waste, and trash and debris may be spilled or leaked during construction with the potential for those pollutants of concern to be transported via storm runoff into receiving waters. Project Feature PF-WQ-2 requires the Build Alternative to comply with the provisions of the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). Project Feature PF-WQ-3 requires projects complying with the Construction General Permit to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). Water quality impacts during construction of the Build Alternative would be less than significant. No mitigation is required.

The Build Alternative would result in a permanent increase in impervious surface area of 1.01 acres resulting solely from the widening of the paved shoulders. An increase in impervious area would increase stormwater runoff volume and velocity and could lead to downstream erosion. However, the Build Alternative is linear with many stormwater discharge points that would distribute the additional stormwater runoff associated with the increased impervious surface area to multiple locations. Therefore, downstream effects from increased flow would be minimal. Implementation of Project Feature PF-WQ-1 would ensure compliance with the provisions of the NPDES Permit and Waste Discharge Requirements to reduce operational impacts. In addition, Caltrans would incorporate approved Design Pollution Prevention and Treatment BMPs and Low Impact Development (LID) strategies consistent with the Caltrans Statewide NPDES permit requirements to address pollutants in runoff that would be generated during operations of the Build Alternative as described in Project Features PF-WQ-4 and PF-WQ-5. Operation of the Build Alternative is not anticipated to result in adverse water quality impacts, and no mitigation is required.

b) Less Than Significant Impact. Groundwater dewatering is not anticipated during construction of the Build Alternative. However, because groundwater levels have historically been measured at less than 20 feet within the study area, the potential for groundwater to be encountered during construction and for groundwater dewatering to be required cannot be ruled out. If dewatering is required, the implementation of Project Feature PF-WQ-6 would ensure that dewatering complies with the General waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego RWQCB. With compliance with this project feature, potential temporary impacts to groundwater supplies or groundwater recharge would be less than significant, and no mitigation is required.

c) and d) Less Than Significant Impact. During construction of the Build Alternative, construction activities would occur near San Juan Creek. Runoff from the study area discharges to San Juan Creek, which runs parallel to SR-74. Downstream from the project area, San Juan Creek is joined by numerous small tributaries below where it joins with Trabuco Creek and discharges to the Pacific Ocean at Doheny Beach. Erosion during project construction and operation would be addressed through compliance with the applicable NPDES permits, the Construction General Permit, the SWRCB General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego Region, the Design Pollution Prevention and Treatment BMPs, and Caltrans approved treatments BMPs as described in Project Features PF-WQ-1 through PF-WQ-5. Construction of the Build Alternative would not result in significant impacts related to erosion and no mitigation is required.

The Build Alternative does not include additional lanes; therefore, an increase in impervious surface area would result solely from the widening of roadway shoulders. The Build Alternative consists of improvements along a linear corridor and the improvement of the existing drainage systems within the project area. These improvements include the replacement of existing culverts and the addition of new culverts that would distribute additional stormwater runoff to multiple locations. The Build Alternative would not introduce any improvements that would change channel hydraulics or increase the risk of flooding and inundation and downstream effects from increased flow would be less than significant. Therefore, drainage improvement associated with the Build Alternative would not result in substantial erosion, siltation, or flooding on or off the project site and no mitigation is required.

e) Less Than Significant Impact. The Build Alternative consists entirely of safety improvements to SR-74 as opposed to capacity or operational improvements and would not substantively increase the total impervious surface areas as noted in Response 3.1.9.1 a), above. As noted in Responses 3.1.9.1 c) and d), the Build Alternative would include improvements to the existing drainage systems including the replacement of existing culverts and the addition of new culverts. Implementation of the Build Alternative would not increase peak storm flows such that they would impact downstream drainage facilities. Compliance with the requirements of the Caltrans NPDES permits, the Construction General Permit, the Design Pollution Prevention and Treatment BMPs, and Caltrans approved treatment BMPs as described in Project Features PF-WQ-1, PF-WQ-2, PF-WQ-4 and PF-WQ-5 would minimize any incremental pollutant loading associated with the increased impervious surface area resulting from the Build Alternative. Therefore, the Build Alternative would not create or contribute runoff water that would exceed the capacity of stormwater drainage systems or provided substantial additional sources of polluted runoff. Impacts would be less than significant and no mitigation is required.

f) Less Than Significant Impact. As discussed above, runoff associated with the operation of the Build Alternative would be treated to remove pollutants of concern as required in Project Features PF-WQ-1 through PF-WQ-5. In addition, refer to Responses 3.1.9.1 a) and 3.1.9.1 e), above. No substantial degradation to water quality would occur as a result of the Build Alternative. No mitigation is required.

g) No Impact. The Build Alternative consists entirely of safety improvements to SR-74 and does not propose the construction of housing in a 100-year flood hazard area. Therefore, the Build Alternative would not result in impacts related to the placement of housing in the 100-year floodplain and no mitigation is required.

h) No Impact. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Nos. 06059C0460J and 06059C0500J, the study area is designated as Zone X (areas determined to be outside the 0.2 percent annual chance floodplain) and Zone D (Otherwise Protected Areas). The Build Alternative is not located in a 100-year flood hazard area. Therefore, the Build Alternative would not construct any structures that would impede or redirect flood flows within a 100-year flood hazard area and no mitigation is required.

i) No Impact. San Juan Creek originates in the Santa Ana Mountains in the Cleveland National Forest and runs parallel to SR-74 in the project area. There are no

levees or dams in San Juan Creek in or upstream from the study area. Per the Orange County General Plan Safety Element, the project area is not within a dam inundation zone. As stated in Response 3.1.9.1 h) above, the Build Alternative is not located in a 100-year flood hazard area. Therefore, the Build Alternative would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, and no mitigation is required.

j) Less Than Significant Impact. San Juan Creek runs parallel to SR-74 in the study area. Downstream of the project area, San Juan Creek is joined by numerous small tributaries below where it joins with Trabuco Creek and ultimately discharges to the Pacific Ocean at Doheny Beach. The Tsunami Map for Emergency Planning for the Dana Point and San Juan Capistrano Quadrangles show that the nearest tsunami inundation area to the southerly project limit of SR-74 is the outlet of San Juan Creek at Doheny Beach. Based on the distance from the project improvements to Doheny Beach (approximately 11.8 miles), there is no anticipated risk of inundation from a tsunami under the Build Alternative.

A seiche is a tsunami-like condition in an enclosed body of water like a lake or reservoir. The nearest enclosed body of water to the project limits is Lake Elsinore. Lake Elsinore is approximately 6.5 miles northeast of the northeastern most part of the project limits. Based on the distance of the project area to this body of water, there is no anticipated risk of inundation from a seiche under the Build Alternative.

Mudflows are described as downhill movement of soft, wet, unconsolidated earth and debris, made fluid by rain or melted snow and often building up great speed. Mudflows occur on steep slopes where vegetation is not sufficient to prevent rapid erosion but can occur on gentle slops if other conditions are met. Other factors are heavy precipitation in short periods and an easily erodible source material. According to the Orange County Sheriff's Department Emergency Management Hazard Profile for landslide and mudslides, almost all hillside areas in Orange County have the potential for mudslides. The Build Alternative consists entirely of safety improvements to SR-74 as opposed to capacity or operational improvements. Therefore, the potential for impacts associated with mudslides would be the same as with the existing condition. Potential impacts associated with mudslides would be less than significant and no mitigation is required.

3.1.10 Land Use and Planning

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

3.1.10.1 CEQA Significance Determinations for Land Use and Planning

The potential for the Build Alternative to result in adverse impacts related to land use and planning was assessed in Sections 2.1, Land Use, and 2.2, Community Impacts, in the IS/EA. The following discussions are based on those analyses.

a) No Impact. The Build Alternative consists entirely of safety improvements to SR-74 and does not include any new roadway alignments. The portion of SR-74 within the study area does not traverse an established community and no acquisitions of residential properties would occur. Therefore, the Build Alternative would not result in the physical division of an established community, and no mitigation is required.

b) No Impact. The Build Alternative is not located in the coastal zone and is consistent with the County of Orange General Plan as it would not alter land uses along the existing facility within the study area Therefore, the Build Alternative does not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect of an agency with jurisdiction over the project, and no mitigation is required.

c) Less Than Significant Impact. As discussed in Response 3.1.4 f), the Build Alternative is located within the USACE San Juan Creek/Western San Mateo Creek Watershed SAMP area and will require permitting under the SAMP. Further measures may also be required to compensate for impacts in order to obtain this authorization. The project area is also located within the Southern Subregion MSAA/HCP. The Build Alternative is consistent with the MSAA/HCP.

Pending final verification by the regulatory agencies, the Build Alternative would be consistent with the SAMP, and the MSAA/HCP and impacts would be less than significant. No mitigation is required.

3.1.11 Mineral Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.1.11.1 CEQA Significance Determinations for Mineral Resources

The potential for the Build Alternative to result in adverse impacts related to mineral resources was assessed based on information from the Orange County General Plan (2005).

a) and b) No Impact. The Resources Element of the Orange County General Plan identified significant construction aggregate resources are located in undisclosed portions of San Juan Creek. A review of the Surface Mining and Reclamation Act of 1975 maps[1] indicates that there are no aggregate production areas in the study area. The Build Alternative consists entirely of safety improvements to SR-74 as opposed to capacity or operational improvements and will only impact drainage crossing that are tributary to San Juan Creek. Therefore, the Build Alternative would not result in the loss of availability of a known mineral resource or mineral resource recovery site, and no mitigation is required.

[1] California Geological Survey. 2012. Aggregate Sustainability in California. Website: http://www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS_52_2012.pdf (accessed February 19, 2018).

3.1.12 Noise

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.1.12.1 CEQA Significance Determinations for Noise

The potential for the Build Alternative to result in significant noise impacts was assessed in Section 2.10, Noise, in the IS/EA. The following discussion is based on that analysis.

a) Less Than Significant Impact. Noise levels during construction of the Build Alternative would have the potential to temporarily impact the sleeping quarters at the San Juan Fire Station. The potential for a high single-event noise exposure exists during the transport of construction equipment and material to and from the project area, resulting in a maximum level of 84 A-weighted decibels (dBA) maximum instantaneous sound level (L_{max}) from trucks passing at 50 ft. However, projected construction traffic would be minimal when compared to existing traffic volumes on SR-74 and other affected streets would not be perceptible. Therefore, noise impacts associated with short-term construction-related worker commutes and equipment transport would be less than significant. Noise levels generated during construction of the Build Alternative have the potential to result in a worst-case composite noise level of 88 dBA L_{max} at the nearest receptor (the San Juan Fire Station, approximately 70 ft

north of SR-74). During construction, the Build Alternative would be required to minimize construction noise impacts on adjacent sensitive land uses in accordance with Caltrans' Standard Specifications Section 14-8.02 as specified in Project Feature PF-N-1. Construction-related noise impacts on adjacent sensitive land uses would be less than significant, and no mitigation is required.

The Build Alternative would not provide for any increase in traffic volumes on SR-74 and would not permanently increase noise levels in the study area, and no mitigation is required.

b) Less Than Significant Impact. The closest existing structure (the San Juan Fire Station) is approximately 70 ft from the edge of the construction area for the Build Alternative. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the construction limits (assuming the construction equipment would be used at or near the construction limit). For typical construction activity, the equipment with the highest vibration generation potential is the large bulldozer, which would generate 87 vibration velocity decibel (VdB) or 0.089 peak particle velocity (PPV) inches per second (in/sec) at 25 ft. During construction of the Build Alternative, this building would experience vibration levels of up to 74 VdB or 0.019 PPV. These vibration levels from construction equipment or activity would be below the 75 VdB Federal Transit Administration's (FTA) guideline for annoyance and the 0.2 in/sec PPV guideline for potential damage as referenced in the Caltrans *Transportation and Construction Vibration Guidance Manual* (September 2013). Therefore, construction of the Build Alternative would result in a less than significant impact associated with ground-borne vibration on surrounding uses, and no mitigation is required.

The Build Alternative would not change the traffic volumes on SR-74 and would not alter the any existing ground-borne vibration associated with existing vehicles on SR-74. Therefore, vibration impacts associated with operation of the Build Alternative are considered less than significant, and no mitigation is required.

c) No Impact. As discussed in Section 2.11, the Build Alternative does not alter the existing roadway in such a manner as to increase capacity or alter the physical geometry of the roadway resulting in an increase in long-term noise levels. Therefore, the Build Alternative would not result in a permanent ambient noise increase, and no mitigation is required.

d) Less Than Significant Impact. As discussed in Response 3.1.12.a), above, noise levels during construction of the Build Alternative would have the potential to result in temporary impacts to sensitive noise receptors. With implementation of Project Feature PF-N-1, potential construction noise impacts are considered less than significant, and no mitigation is required.

e) No Impact. As discussed in Section 2.1, Land Use, of this IS/EA, the study area is not within an airport land use plan or within two miles of a public airport or public use airport. As a result, the Build Alternative would not expose people using SR-74 to aviation-related noise levels different than what would occur under existing conditions. Therefore, the Build Alternative would not result in aviation-related noise impacts, and no mitigation is required.

f) **No Impact.** The nearest private airstrip, the McConville Airstrip near Lake Elsinore, is approximately 3 miles northeast of the study area (northeast of the San Juan Fire Station). The Build Alternative consists entirely of safety improvements to SR-74 and following completion of construction would not have people working within the project area. Therefore, the Build Alternative would not expose people residing or working in the project area to excessive noise levels, and no mitigation is required.

3.1.13 Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.1.13.1 CEQA Significance Determinations for Population and Housing

The potential for the Build Alternative to result in adverse impacts related to population and housing was assessed in Section 2.2, Community Impacts, in the IS/EA. The following discussion is based on that analysis.

a) No Impact. The Build Alternative consists solely of safety improvements to SR-74 and would not increase capacity or population growth through the development of new homes or businesses or add additional roads or infrastructure. Therefore, construction and operation of the Build Alternative would not induce substantial population growth directly or indirectly, and no mitigation is required.

b), c) No Impact. The Build Alternative consists solely of safety improvements to SR-74 and would not include the construction of new housing, affect existing housing or require replacement housing. Therefore, the Build Alternative would not displace existing housing or residents or result in the need for replacement housing, and no mitigation is required.

3.1.14 Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☒	☐
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☒	☐

3.1.14.1 CEQA Significance Determinations for Public Services

The potential for the Build Alternative to impact public services and facilities is assessed in Sections 2.1, Land Use, 2.3, Utilities and Emergency Services, and 2.4,

Traffic and Transportation, of the IS/EA. The following discussions are based on those analyses.

a) i) and ii) Less Than Significant Impact. For the portions of the study area that are located within the Cleveland National Forest, fire protection services, emergency services, and law enforcement services are provided by the United States Forest Service (USFS). For the portions of the study area that are located within Caspers Wilderness Park, fire protection services are provided by Orange County Fire Authority, and police services are provided by the Orange County Sheriff's Department and the California Highway Patrol. As described below in Response 3.1.16.1 a,) construction of the Build Alternative would result in temporary impacts to traffic circulation. Those impacts would include partial and full short-term closures of SR-74, which have the potential to result in short-term impacts to emergency (fire and police) response times in the vicinity of the project area. Emergency responders would need to use designated detour routes, or experience extended travel times due to partial lane closures. This could result in increased response times for emergency service providers in the project area. Project Feature PF-T-1 requires the preparation prior to construction, and implementation during construction, of a Transportation Management Plan (TMP). The TMP will specifically address requirements for coordination with emergency service providers and accommodation of emergency travel routes and access to, through, and around active construction areas. Similarly, Project Feature PF-UES-2 requires all temporary closures and detour plans be coordinated with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times, including the identification of alternative routes for emergency vehicles and routes across the construction areas that are developed. Potential impacts associated with emergency services would be less than significant, and no mitigation is required.

The Build Alternative would widen the existing shoulders and improve pull-outs in both directions along SR-74. In the long term, these improvements would help facilitate access of emergency response vehicles through the project corridor by allowing increased access during emergencies. In addition, the installation of lighting at the San Juan Fire Station would improve visibility at night for emergency responders. Therefore, operation of the Build Alternative would have a less than significant impact on the delivery of emergency services within the study area, and no mitigation is required.

a) iii), iv), v) Less Than Significant Impact. During construction of the Build Alternative, access to schools in the vicinity of the project area would not be affected because such access is not provided within the project limits.

Temporary full road closures would occur outside the peak hours of 5:30 a.m. and 9:30 a.m. and 4:30 p.m. and 6:30 p.m., Monday through Friday, and detour routes would be provided in accordance with the project's TMP as specified in Project Feature PF-T-1. Therefore, temporary impacts to schools, parks, and other public facilities during construction of the Build Alternative would be less than significant.

The Build Alternative consists solely of safety improvements to SR-74; therefore, operation of the Build Alternative would not result in permanent impacts to schools, parks, or other public facilities, and no mitigation is required.

3.1.15 Recreation

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

3.1.15.1 CEQA Significance Determinations for Recreation

The potential for the Build Alternative to adversely impact recreation resources was assessed in Sections 2.1, Land Use, and 2.2, Community Impacts, in the IS/EA. The following discussions are based on those analyses.

a) No Impact. The Build Alternative consists solely of safety improvements to SR-74 and would not result in the construction of residential or other land uses that would attract visitors to regional parks or other recreational facilities adjacent to the project area. Therefore, the Build Alternatives would not result in an increased demand for those facilities or contribute to substantial or accelerated deterioration of those facilities. No mitigation is required.

b) Less Than Significant Impact. The Build Alternative would result in the acquisition of land from Cleveland National Forest (0.2 acre) and Caspers Wilderness Park (0.7 acre) for use as an easement along SR-74. The proposed amount of land to be acquired for easement purposes is approximately 0.00005 percent of the total amount of land in the Cleveland National Forest and is less than 0.1 percent of the total amount of land in Caspers Wilderness Park. Therefore, permanent impacts to recreational facilities would be minimal compared to the overall size of Cleveland National Forest and Caspers Wilderness Park. Furthermore, because the affected parcels are at the edge of Cleveland National Forest and Caspers Wilderness Park, adjacent to Caltrans right-of-way, the permanent acquisition would not adversely affect the rest of the recreational facilities. Therefore, the Build Alternative would result in less than significant impacts to recreational facilities or result in the construction of new or expanded recreation facilities.

3.1.16 Transportation/Traffic

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐

f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

3.1.16.1 CEQA Significance Determinations for Transportation/Traffic

The potential for the Build Alternative to result in adverse traffic impacts was assessed in Section 2.4, Traffic and Transportation/Pedestrian and Bicycle Facilities, in the IS/EA. The following discussion is based on that analysis.

a) Less Than Significant Impact. Construction of the Build Alternative has the potential to result in temporary impacts to traffic circulation and bicycle access in the project area resulting from temporary road closures. Temporary partial closures along SR-74 would be implemented as needed during off-peak traffic periods and would leave one travel lane open for use by both eastbound and westbound directions of travel. Additionally, project construction activity may require intermittent detours due to required full closures of SR-74 that could result in temporary adverse impacts on traffic operations along I-5, I-15, State Route 55 (SR-55), SR-91, and SR-76. A TMP, as described in Project Feature PF-T-1 would be prepared and implemented to address impacts related to detours and closures. Temporary road closures would occur outside of peak hours. There are no dedicated pedestrian or transit facilities within the study area and no temporary construction-related impacts to pedestrian or buses would occur. Similarly, there are no dedicated bicycle facilities within the study area, although bicyclists are not prohibited from accessing SR-74 within the study area. Partial closures, full closures, and detours would temporarily impact bicyclists who choose to use the portion of SR-74 within the study area in the same manner that the motoring public would be impacted. The TMP that would be prepared as a result of Project Feature PF-T-1 would address detours for both motorists and bicyclists. Therefore, temporary impacts to motorists and bicyclists would be less than significant, and no mitigation is required.

The Build Alternative does not conflict with any applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. There are no existing or planned bicycle or transit facilities in the study area, therefore safety improvements to SR-74 would affect any planned facilities and no mitigation is required.

b) Less Than Significant Impact. The Build Alternative would not conflict with Orange County's Congestion Management Program. The Build Alternative consists

entirely of safety improvements to SR-74 as opposed to capacity or operational improvements and would not affect traffic volumes or level of service on SR-74. As such, existing and future SR-74 traffic operations would not be affected by implementation of the Build Alternative, and no mitigation is required.

c) No Impact. The Build Alternative consists entirely of safety improvements to SR-74. The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. Therefore, no impacts would occur, and no mitigation is required.

d) No Impact. The Build Alternative consists entirely of safety improvements to SR-74 and would be designed, constructed, and operated consistent with Caltrans *Highway Design Manual* (2017) and other applicable standards and specifications (i.e., utilities relocation/modifications). The Build Alternative would not include hazardous design features or incompatible uses, and no mitigation is required.

e) Less Than Significant Impact. As described earlier in Response 3.1.16 a), construction of the Build Alternative has the potential to result in temporary impacts to traffic circulation, including emergency services, resulting from temporary road closures. Those impacts would be avoided and/or minimized based on implementation of the TMP during construction as specified in Project Feature PF-T-1. Additionally, Project Feature PF-UES-2 would require coordination of road closures and detour plans with emergency service providers to minimize temporary delays in emergency response times and identify alternative routes for emergency vehicles and routes across the construction areas. Therefore, construction of the Build Alternative would result in less than significant impacts associated with adequate emergency response, and no mitigation is required.

f) No Impact. As discussed in the Section 2.1, Land Use, in the IS/EA, the Build Alternative would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. The Build Alternative does not propose an operational change to SR-74, and no mitigation is required.

3.1.17 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.1.17.1 CEQA Significance Determinations for Tribal Cultural Resources

The potential for the Build Alternative to adversely impact Tribal Cultural Resources was assessed in the HPSR (January 2018), the attachments to the HPSR, Section 2.6, Cultural Resources; and by adhering to AB 52. AB 52 went into effect on July 1, 2015, proposing to include tribal cultural resources in the CEQA analysis, and introducing a new class of resources: Tribal Cultural Resources. The California Office of Administrative Law approved the changes to the CEQA Checklist to incorporate the Tribal Cultural Resources Questions on September 27, 2016. The project is subject to the requirements of AB 52, the CEQA Tribal Consultation law.

Section 106 consultation was conducted concurrently with AB 52 consultation as a joint effort between LSA and Caltrans. The following Native American Tribes, groups, and individuals were contacted via letter sent by Caltrans on May 30, 2017, and contacted again by LSA on June 22, 2017, or June 29, 2017, with follow-up emails or phone calls as needed:

- Juaneño Band of Mission Indians, Sonia Johnston, Chairperson: No response has been received.
- Juaneño Band of Mission Indians Acjachemen Nation – Belardes, Matias Belardes, Chairperson: No response has been received.

- Juaneño Band of Mission Indians Acjachemen Nation – Romero, Teresa Romero, Chairperson: No response has been received.
- Pauma Band of Luiseño Indians – Pauma and Yuima Reservation, Temet Aguilar, Chairperson: Chris Devers (with the same group) responded to the phone call, stating that his Tribe has no concerns about the project, but he requested to be notified if human remains are encountered during construction. During that same phone call, it was discussed that the County Coroner will be called if human remains are encountered, and Mr. Devers agreed to that process.

Due to positive results from the Sacred Lands File (SLF) search, Caltrans conducted additional consultation with Ms. Perry, Tribal Manager for the Juaneño Band of Mission Indians Acjachemen Nation – Belardes group. Ms. Perry joined Caltrans Archaeologists in the field on June 28, 2017, and it was communicated by Ms. Perry that the positive result from the NAHC was likely for the actual hot springs, which would not be impacted by the Build Alternative, and they would likely have standard comments. On July 7, 2017, Caltrans emailed Ms. Perry to update her on the results of the archaeological survey and follow up regarding any comments she may have on the project. On October 5, 2017, Caltrans followed up with Ms. Perry by email to request comments on the project. No further response was received.

Additional consultation was conducted with Rebecca Robles. Ms. Robles was contacted because of a comment she had made on a previous project in 2014 about the San Juan Hot Springs site being nominated to the State of California's Native American Heritage Commission List of Sacred Places on September 14, 2008. On July 7, 2017, Ms. Robles was contacted by LSA to inform her of the project and ask for any comments or concerns, specifically regarding the San Juan Hot Springs site. After a brief phone discussion, a follow-up email was sent the same day, with an attached image showing the project limits in relationship to the hot springs area. The email requested that Ms. Robles provide any comments or concerns regarding the proposed project as they relate to Native American cultural resources. No response was received.

Further detail of the tribal coordination process subject to the requirements of AB 52 can be found in Chapter 4, Comments and Coordination, of this IS/EA.

a) and b). Less Than Significant Impact with Mitigation Incorporated. The SLF search came back positive for an undisclosed resource within the San Juan Hot Springs site, P-30-1723. As discussed above in Section 3.1.5 a) and b), P-30-1723 and

P-30-528 (located within the resource boundary of P-30-1723) are considered eligible for the National Register for the purposes of this project, and are therefore considered historic resources pursuant to CEQA.

The resource boundary of P-30-1723 crosses the boundary of the APE. P-30-528 is located inside the resource boundary of P-30-1723. Construction of the Build Alternative would have the potential to affect the resources due to construction activities in the vicinity of the resources. Implementation of Mitigation Measure CR-1 would require the Environmentally Sensitive Area (ESA) Action Plan to follow up and protect both sites by installing protective orange plastic fencing to keep out construction personnel. Therefore, with implementation of Mitigation Measure CR-1, potential effects to these resources would be less than significant.

If buried cultural materials are discovered during construction, Project Feature PF-CUL-1 would be implemented requiring the diversion of earthmoving activities in the vicinity until the discovery can be assessed by a qualified archaeologist. If previously unknown human remains are discovered during construction of the Build Alternative, Project Feature PF-CUL-2 would be implemented requiring earthmoving activities to stop and the County Coroner would be contacted. In the event that previously unknown buried cultural materials or human remains are encountered during construction, potential impacts to these resources would be less than significant.

3.1.18 Utilities and Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

3.1.18.1 CEQA Significance Determinations for Utilities and Service Systems

The potential for the Build Alternative to adversely impact utilities and service systems was assessed in Sections 2.3, Utilities and Emergency Services, and 2.7, Water Quality, in the IS/EA. The following discussions are based on those analyses.

a), b), and e) No Impact. The Build Alternative would not generate wastewater or discharge wastewater to an area sewer system. As a result, the Build Alternative would not exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities, or result in the need for a determination by a wastewater treatment provider that it has adequate capacity to serve the Build Alternative, and no impact would occur.

c) Less Than Significant Impact. Refer to Responses 3.1.9.1 c), d), and e) in Section 3.1.9, Hydrology and Water Quality, for discussion of the existing storm water drainage facilities that would be extended or modified to accommodate the safety improvements under the Build Alternative. The replacement of existing culverts and addition of new culverts would result in the expansion of the existing stormwater drainage facilities; however, the existing drainage pattern would be maintained to the maximum extent practicable, and appropriate resource/regulatory agency permitting would be conducted. Therefore, the Build Alternative's potential effects due to the construction or expansion of storm water drainage facilities would not be significant. No mitigation is required.

d) No Impact. The use of water during project construction would be limited to water trucked to the site for dust control. The amount of water used during construction would be minimal. The use of water during project operations would be nominal and limited to areas in which revegetation requires short-term watering while the plant material becomes established. As a result, the Build Alternative would not require the

water districts serving the project area to provide new or expanded entitlements to meet the need for water during construction and operation of the Build Alternative, and no impact would occur.

f) Less Than Significant Impact. During construction of the Build Alternative, two types of waste materials would be collected: vegetation, other plant material, and some excess soils; and solid waste such as concrete, asphalt, and wood. The waste collected during construction would be properly disposed of at an existing landfill or recycled. The amount of waste that would be generated during the construction of the Build Alternative would be limited and would occur only during the construction period. That amount of waste generated during construction of the Build Alternative would be nominal when compared to the total waste disposed of or recycled at area recycling facilities and landfills, on both a daily and annual basis. Therefore, the amount of waste generated during construction of the Build Alternative is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County.

The waste collected during operation of the Build Alternative would be properly disposed of at an existing landfill or recycled and would be only incrementally, if at all greater, than what is generated during existing conditions. The amount of waste generated during the operation of the Build Alternative would be nominal when compared to the total waste disposed of or recycled at area recycling facilities and landfills, on both a daily and annual basis. Therefore, the amount of waste generated during operation of the Build Alternative is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County.

Because the amount of waste generated during construction and operation of the Build Alternative is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County, project-related impacts associated with solid waste disposal needs would be less than significant. No mitigation is required.

g) Less Than Significant Impact. Waste materials generated during construction and operation of the Build Alternative would be disposed of in accordance with federal, State, and local regulations related to recycling, which would minimize the amount of waste material entering local landfills. Project-related impacts associated with solid waste would be less than significant, and no mitigation is required.

3.1.19 Mandatory Findings of Significance

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.1.19.1 CEQA Significance Determinations for Mandatory Findings of Significance

a) **Less Than Significant with Mitigation Incorporated.** As discussed in greater detail in Section 3.1.4, Biological Resources, potentially significant impacts to ARTO would be mitigated by the delineation of ESAs and compensatory mitigation for suitable ARTO habitat (Measures BIO-5 and BIO-23, respectively) to below a level of significance, avoiding a substantial reduction in habitat for ARTO. Similarly, the provision of Mitigation Measure CR-1 would provide for an ESA Action Plan and fencing around sensitive cultural resources near the study area, would mitigate this impact below a level of significance, and would not eliminate an example of the major periods of California history or prehistory. Therefore, after incorporation of these mitigation measures, impacts would be less than significant.

b) Less Than Significant with Mitigation Incorporated. Because the project limits along SR-74 are within an area of relatively high sensitivity for some cultural and biological resources, ARTO in particular (see Sections 3.1.4 and 3.1.5 for further details), the effects of the project in connection with the effects of past, present, and reasonably foreseeable future projects along SR-74 (both within and adjacent to the

limits of the proposed project) could be significant. However, because appropriate project features and avoidance, minimization, and mitigation measures are proposed to address any adverse impacts to cultural and biological resources below a level of significance, the proposed project would not result in impacts that are cumulatively considerable. No further mitigation is necessary.

c) Less Than Significant Impact. As discussed in the previous sections within this chapter, the proposed project would not relocate residences or businesses, have significant impacts on air quality, noise, and public services, and would generally not have substantial adverse effects on human beings. The proposed project is a safety project and would not materially change the operation of SR-74 within the project limits; neither would it provide for more throughput that would increase traffic volumes along the segment of SR-74. Therefore, impacts would be less than significant, and no mitigation is necessary.

3.2 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation.[1] In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles) are the largest

[1] United States Environmental Protection Agency (EPA). *Greenhouse Gas Emissions, U.S. Greenhouse Gas Inventory Report: 1990-2014.* Website: https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014.

contributors of GHG emissions.[1] The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." "Greenhouse gas mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. "Adaptation" refers to planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).

3.2.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

3.2.1.1 Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA, therefore, supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices.[2] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of

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1 California Air Resources Board (ARB). *California Greenhouse Gas Emission Inventory – 2017 Edition* (Released June 6, 2017). Website: https://www.arb.ca.gov/cc/inventory/data/data.htm.

2 Federal Highway Administration (FHWA). Office of Planning, Environment, and Realty (HEP). *Environment, Sustainability, Resilience.* (Updated October 19, 2017). Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/.

sustainability."[1] Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life. Addressing these factors up front in the planning process will assist in decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

The Energy Policy Act of 1992 (EPACT92, 102nd Congress H.R.776.ENR): With this act, Congress set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 consists of 27 titles detailing various measures designed to lessen the nation's dependence on imported energy, provide incentives for clean and renewable energy, and promote energy conservation in buildings. Title III of EPACT92 addresses alternative fuels. It gave the U.S. Department of Energy administrative power to regulate the minimum number of light-duty alternative fuel vehicles required in certain federal fleets beginning in fiscal year 1993. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020.

Energy Policy Act of 2005 (109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Indian energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Standards: This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

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[1] FHWA. *Sustainable Highways Initiative*. Website: https://www.sustainablehighways.dot.gov/overview.aspx.

Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, 74 *Federal Register* 52117 (October 8, 2009): This federal EO set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. The EO instituted, as policy of the United States, that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities.

Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, 80 *Federal Register* 15869 (March 2015): This EO reaffirms the policy of the United States that federal agencies measure, report, and reduce their GHG emissions from direct and indirect activities. It sets sustainability goals for all agencies to promote energy conservation, efficiency, and management by reducing energy consumption and GHG emissions. It builds on the adaptation and resiliency goals in previous executive orders to ensure agency operations and facilities prepare for impacts of climate change. This order revokes Executive Order 13514.

The U.S. EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts* v. *EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on the scientific evidence, it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions.

The U.S. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010[1] and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards required these vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 and beyond to average fuel economy of

[1] C2ES, Center for Climate and Energy Solutions. *Regulating Power Sector Carbon Emissions.* Website: http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq.

54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. The Mid-Term Evaluation is the overarching process by which NHTSA, EPA, and ARB will decide on CAFE and GHG emissions standard stringency for model years 2022–2025. NHTSA has not formally adopted standards for model years 2022 through 2025. However, the EPA finalized its mid-term review in January 2017, affirming that the target fleet average of at least 54.5 miles per gallon by 2025 was appropriate. In March 2017, President Trump ordered EPA to reopen the review and reconsider the mileage target.[1]

NHTSA and EPA issued a Final Rule for "Phase 2" for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO_2 emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth*, of March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

3.2.1.2 State

With the passage of legislation including State Senate and Assembly bills and executive orders, California has been innovative and proactive in addressing GHG emissions and climate change.

Assembly Bill 1493, Pavley Vehicular Emissions: Greenhouse Gases, 2002: This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter

[1] NBC News. March 16, 2017. *Trump Rolls Back Obama-Era Fuel Economy Standards.* Website: http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256; and the Federal Register. March 22, 2017. *Notice of Intention To Reconsider the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles.* Website: https://www.federalregister.gov/documents/2017/03/22/2017-05316/notice-of-intention-to-reconsider-the-final-determination-of-the-mid-term-evaluation-of-greenhousegasemissions.

emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year.

Executive Order S-3-05 (June 1, 2005): The goal of this executive order (EO) is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32 (AB 32), Chapter 488, 2006: Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and State agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

Senate Bill 97 (SB 97), Chapter 185, 2007, Greenhouse Gas Emissions: This bill requires the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for

passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 391 (SB 391), Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

Executive Order B-16-12 (March 2012): This order requires State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015): This order establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all State agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMT of CO_2e). Finally, it requires the California Natural Resources Agency to update the State's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, (SB 32) Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

3.2.2 Environmental Setting

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multi-year program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. ARB approved the *First Update to the Climate Change Scoping Plan* on May 22, 2014. On November 2017, ARB has

released the Final Proposed California's 2017 Climate Change Scoping Plan that reflects the 2030 target established in EO B-30-15 and SB 32.

The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. As part of its supporting documentation

for the Draft Scoping Plan, ARB released the GHG inventory for California.[1] ARB is responsible for maintaining and updating California's GHG Inventory per H&SC Section 39607.4. The associated forecast/projection is an estimate of the emissions anticipated to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented.

An emissions projection estimates future emissions based on current emissions, expected regulatory implementation, and other technological, social, economic, and behavioral patterns. The projected 2020 emissions provided in Figure 3.2-1 represent a business-as-usual (BAU) scenario assuming none of the Scoping Plan measures are implemented. The 2020 BAU emissions estimate assists ARB in demonstrating progress toward meeting the 2020 goal of 431 MMT of CO_2e.[2] The 2017 edition of the GHG emissions inventory (released June 2017) found total California emissions of 440.4 MMT of CO_2e, showing progress towards meeting the AB 32 goals.

The 2020 BAU emissions projection was revisited in support of the First Update to the Scoping Plan (2014). This projection accounts for updates to the economic forecasts of fuel and energy demand as well as other factors. It also accounts for the effects of the 2008 economic recession and the projected recovery. The total emissions expected in the 2020 BAU scenario include reductions anticipated from Pavley I and the Renewable Electricity Standard (30 MMT of CO_2e total). With these reductions in the baseline, estimated 2020 statewide BAU emissions are 509 MMT of CO_2e.

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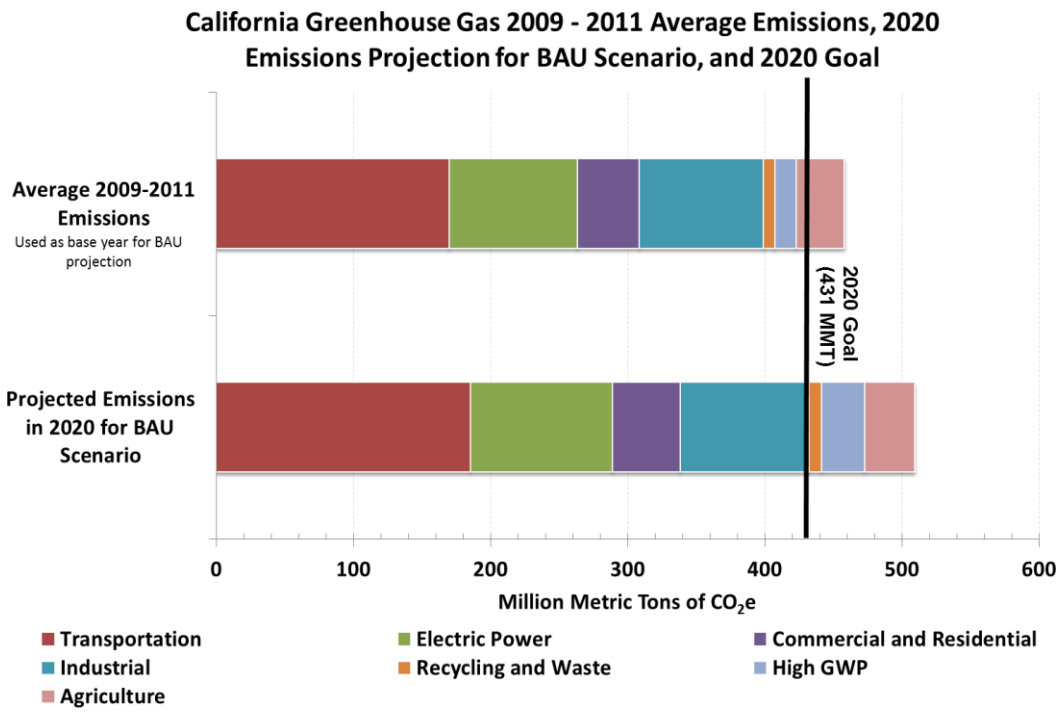
1 ARB. 2016. *2016 Edition of the GHG Emission Inventory. California Greenhouse Gas Emissions for 2000 to 2014 – Trends of Emissions and Other Indicators* (June 17, 2016). Website: https://www.arb.ca.gov/cc/inventory /data/ data.htm.

2 The revised target using Global Warming Potentials (GWP) from the IPCC Fourth Assessment Report (AR4): *Climate Change 2007 Working Group I: The Physical Science Basis*, Chapter 2.10 Global Warming Potentials and Other Metrics for Comparing Different Emissions. Website: https://www.ipcc.ch/ publications_and_data/ar4/wg1/en/contents.html.

Figure 3.2-1 2020 Business as Usual (BAU) Emissions Projection 2014 Edition



Source: California Air Resources Board. *2020 Business-as-Usual (BAU) Emissions Projection 2014 Edition* (Last reviewed on June 6, 2017). Website: https://www.arb.ca.gov/cc/inventory/data/bau.htm.

3.2.3 Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[1] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines

[1] This approach is supported by the Association of Environmental Professionals in its *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District's *Chapter 6: The CEQA Guide* (April 2011), and the U.S. Forest Service's *Climate Change Considerations in Project Level NEPA Analysis* (July 13, 2009).

Sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

GHG emissions for transportation projects can be divided into those produced during operations and those produced during construction. The following represents a best faith effort to describe the potential GHG emissions related to the proposed project.

3.2.3.1 Operational Emissions

Sources of operational GHG emissions would be the vehicles operating on SR-74. The purpose of the proposed project is to improve safety along the SR-74 roadway once the road becomes operational. The proposed project would not increase the capacity of the highway or generate new regional vehicular trips. Because the proposed safety improvement project will not change traffic composition, speed, or volumes, the project would not change operational GHG emissions in the project area.

3.2.3.2 Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction GHG emissions for the proposed project were estimated using the *Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model*, version 8.1.0 (2016). Construction is expected to take approximately 23 months, and to result in 1,852.49 metric tons per year (MT/yr) of

carbon dioxide equivalent (CO_2e)[1] over that period. Total GHG emissions calculated in this model account for reactive organic gases (ROG), carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter less than 2.5 microns ($PM_{2.5}$), particulate matter less than 10 microns (PM_{10}), sulfur oxides (SO_X), carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). A summary of construction GHG emissions in MT by construction phases is provided in Table 3.2.1.

Table 3.2.1 Summary of Emissions from Construction Activities

Project Phases	CO_2e Emissions
Grubbing/Clearing	70.27
Grading/Excavation	1,177.55
Drainage/Utilities/Sub-grade	449.30
Paving	155.36
Maximum GHG Emissions per phase (metric tons per phase)	1,177.55
Total GHG Emissions (entire period in metric tons per year)	**1,852.49**

Source: Compiled by LSA (December 2017).
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
MT/year = metric tons per year

Caltrans Standard Specifications, a part of all construction contracts, includes requirements for contractors to comply with ARB and local air pollution control district rules, ordinances, and regulations for air quality. Measures such as minimizing idling time, keeping equipment maintained, and using equipment with ARB-permitted engines contribute to reducing GHGs by minimizing construction vehicle emissions. Measures listed in Section 3.2.4.3 (Project-Level GHG Reduction Strategies) would reduce the GHG emissions generated by on-site construction equipment.

3.2.3.3 CEQA Conclusion

While the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in an increase in operational GHG emissions. While it is Caltrans' determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the

[1] Because the various GHGs differ in how strongly they affect the atmosphere, each gas is assigned a global warming potential (GWP) value equivalent to 1 ton of CO_2 to allow comparison. For example, methane (CH_4) is 25 times as powerful as CO_2, so its GWP is 25. The resulting total emissions of all gases measured are then expressed as CO_2e.

project's direct impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.2.4 Greenhouse Gas Reduction Strategies

3.2.4.1 Statewide Efforts

In an effort to further the vision of California's GHG reduction targets outlined in AB 32 and SB 32, Governor Brown identified key climate change strategy pillars (concepts). As shown in Figure 3.2-2, these pillars highlight the idea that several major areas of the California economy will need to reduce emissions to meet the 2030 GHG emissions target. These pillars are (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farm and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the State's climate adaptation strategy, *Safeguarding California*.

Figure 3.2-2 The Governor's Climate Change Strategy Pillars: 2030

3.2.4.2 Greenhouse Gas Reduction Goals

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that we build on our past successes in reducing criteria and toxic air pollutants from transportation and goods movement activities. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. One of Governor Brown's key pillars sets the ambitious goal of reducing today's petroleum use in cars and trucks by up to 50 percent by 2030.

Governor Brown called for support to manage natural and working lands, including forests, rangelands, farms, wetlands, and soils, so they can store carbon. These lands have the ability to remove carbon dioxide from the atmosphere through biological processes, and to then sequester carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016) set new interim targets to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future statewide, integrated, multimodal transportation system. It serves as an umbrella document for all of the other statewide transportation planning documents.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in pricing, transportation alternatives, mode shifts, and operational efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled per capita
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several funding and technical assistance programs that have GHG reduction benefits. These include the Bicycle Transportation Program, Safe Routes to School, Transportation Enhancement Funds, and Transit Planning Grants. A more extensive description of these programs can be found in *Caltrans Activities to Address Climate Change* (April 2013), mentioned below.

- Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012): This policy is intended to establish a department policy that will ensure coordinated efforts to incorporate climate change into departmental decisions and activities.
- *Caltrans Activities to Address Climate Change* (April 2013): This reference provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce GHG emissions resulting from agency operations.

3.2.4.3 Project-Level GHG Reduction Strategies

Project Feature PF-GHG-1 will be implemented in the proposed project to reduce GHG emissions and potential climate change impacts from the project.

PF-GHG-1 **Best Available Control Technology (BACT).** During design, construction, and operation of the project, the measures that incorporate BACT will used, including but not limited to:

- The EPA, NHTSA, and ARB standards related to fuel efficiency and emission reduction will be met or exceeded by the use of energy and fuel-efficient vehicles.

- Alternative (non-petroleum based) fuels will be used where feasible.
- Construction debris will be recycled to the maximum extent feasible.
- Grid-based electricity or on-site renewable electricity generation will be utilized rather than diesel and/or gasoline-powered generators where feasible.
- ARB-verified Level 3 emission control devices will be installed on all diesel engines and diesel construction equipment will meet ARB's Tier 4 requirements.

The following project features from other sections of this IS/EA will also help to reduce GHG emissions and potential climate change impacts from the project.

- Project Feature PF-AQ-2 states that ozone precursor emissions during construction will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications. Proper engine maintenance also helps minimize GHGs in exhaust emissions.
- Project Feature PF-AQ-4 states that the contractor will adhere to Caltrans Standard Specifications for construction (Section 14-9.02) regarding air pollution control.
- Project Feature PF-AQ-5 states that all construction vehicles both on- and off-site shall be prohibited from idling in excess of 10 minutes.
- Project Feature PF-VIS-2 states that replacement plantings will be included in the final design to compensate for the loss of existing vegetation, including trees, removed during construction.

A final Transportation Management Plan (TMP) (project feature PF-T-1) will be prepared prior to construction that identifies methods to avoid and minimize construction-related traffic and circulation effects and minimize impacts to pedestrian and bicycle access during project construction. Lane closures would also be scheduled outside of peak hours to minimize traffic delays and related GHG emissions.

The construction contractor must comply with South Coast Air Quality Management District (SCAQMD) rules, ordinances, and regulations in regards to air quality restrictions, some of which may reduce GHG emissions.

3.2.4.4 Adaptation Strategies

"Adaptation strategies" refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage—or, put another way, planning and design for resilience. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. These types of impacts to the transportation infrastructure may also have economic and strategic ramifications.

Federal Efforts

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011,[1] outlining the federal government's progress in expanding and strengthening the nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provided an update on actions in key areas of federal adaptation, including building resilience in local communities, safeguarding critical natural resources such as fresh water, and providing accessible climate information and tools to help decision-makers manage climate risks.

The federal Department of Transportation issued the *U.S. DOT Policy Statement on Climate Adaptation* in June 2011, committing to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely and that

[1] The White House. President Barack Obama. Council on Environmental Quality. *Climate Change Resilience.* Website: https://obamawhitehouse.archives.gov/administration/eop/ceq/initiatives/resilience.

transportation infrastructure, services and operations remain effective in current and future climate conditions."[1]

To further the USDOT Policy Statement, on December 15, 2014, the FHWA issued Order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*).[2] This directive established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The FHWA will work to integrate consideration of these risks into its planning, operations, policies, and programs in order to promote preparedness and resilience; safeguard federal investments; and ensure the safety, reliability, and sustainability of the nation's transportation systems.

The FHWA has developed guidance and tools for transportation planning that fosters resilience to climate effects and sustainability at the federal, State, and local levels.[3]

State Efforts

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of State agencies to address California's vulnerability to sea-level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea-level rise and directed all State agencies planning to construct projects in areas vulnerable to future sea-level rise to consider a range of sea-level rise scenarios for the years 2050 and 2100, assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea-level rise. Sea-level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, and storm surge and storm wave data.

Governor Schwarzenegger also requested the National Academy of Sciences, Engineering, and Medicine to prepare an assessment report to recommend how

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1 FHWA. 2017. Office of Planning, Environment, & Realty (HEP). *Environment, Sustainability, Policy & Guidance, US DOT Policy Statement on Climate Change Adaptation, June 2011* (Updated June 28, 2017). Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm.

2 FHWA. 2014. *FHWA Order 5520*. December 15, 2014. Website: https://www.fhwa.dot. gov/legsregs/directives/orders/5520.cfm.

3 FHWA. 2017. Office of Planning, Environment, and Realty (HEP). *Environment, Sustainability, Resilience.* (Updated October 19, 2017). Website: https://www.fhwa.dot.gov/environment/sustainability/resilience/.

California should plan for future sea-level rise. The final report, *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (Sea-Level Rise Assessment Report)[1] was released in June 2012 and included relative sea-level rise projections for the three states, taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge, and land subsidence rates; and the range of uncertainty in selected sea-level rise projections. It provided a synthesis of existing information on projected sea-level rise impacts to State infrastructure (such as roads, public facilities, and beaches), natural areas, and coastal and marine ecosystems; and a discussion of future research needs regarding sea-level rise.

In response to EO S-13-08, the California Natural Resources Agency, in coordination with local, regional, State, federal, and public and private entities, developed *The California Climate Adaptation Strategy* (December 2009),[2] which summarized the best available science on climate change impacts to California, assessed California's vulnerability to the identified impacts, and outlined solutions that can be implemented within and across State agencies to promote resiliency. The adaptation strategy was updated and rebranded in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan).

Governor Jerry Brown enhanced the overall adaptation planning effort by signing EO B-30-15 in April 2015, requiring State agencies to factor climate change into all planning and investment decisions. In March 2016, sector-specific Implementation Action Plans that demonstrate how State agencies are implementing EO B-30-15 were added to the Safeguarding California Plan. This effort represents a multi-agency, cross-sector approach to addressing adaptation to climate change-related events statewide.

EO S-13-08 also gave rise to the *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance), produced by the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT), of which Caltrans is a member. First published in 2010, the document provided "guidance for incorporating sea-level rise

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1 The National Academies of Sciences, Engineering, and Medicine. 2012. *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012). Website: http://www.nap.edu/catalog.php?record_id=13389.

2 State of California. 2018. *California Climate Change, California Climate Adaptation Strategy.* Website: http://www.climatechange.ca.gov/adaptation/strategy/index.html.

(SLR) projections into planning and decision making for projects in California," specifically, "information and recommendations to enhance consistency across agencies in their development of approaches to SLR." The March 2013 update[1] finalizes the SLR Guidance by incorporating findings of the National Academy of Sciences, Engineering and Medicine's 2012 final Sea-Level Rise Assessment Report; the policy recommendations remain the same as those in the 2010 interim SLR Guidance. The guidance will be updated as necessary in the future to reflect the latest scientific understanding of how the climate is changing and how this change may affect the rates of SLR.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation, and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. Caltrans is actively engaged in working towards identifying these risks throughout the State and will work to incorporate this information into all planning and investment decisions as directed in EO B-30-15.

The proposed project is outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

Although part of the project purpose is to divert off-site runoff from flowing over the pavement, the runoff results from adjacent steep slopes, not from a floodplain. The *Location Hydraulic Study* (Caltrans 2017) found that the project area is outside the 0.2 percent annual chance (500-year) floodplain, and the flood risk level is low.

[1] State of California Ocean Protection Council. 2018. *State of California Sea-Level Rise Guidance Document*. Website: http://www.opc.ca.gov/2013/04/update-to-the-sea-level-rise-guidance-document/.